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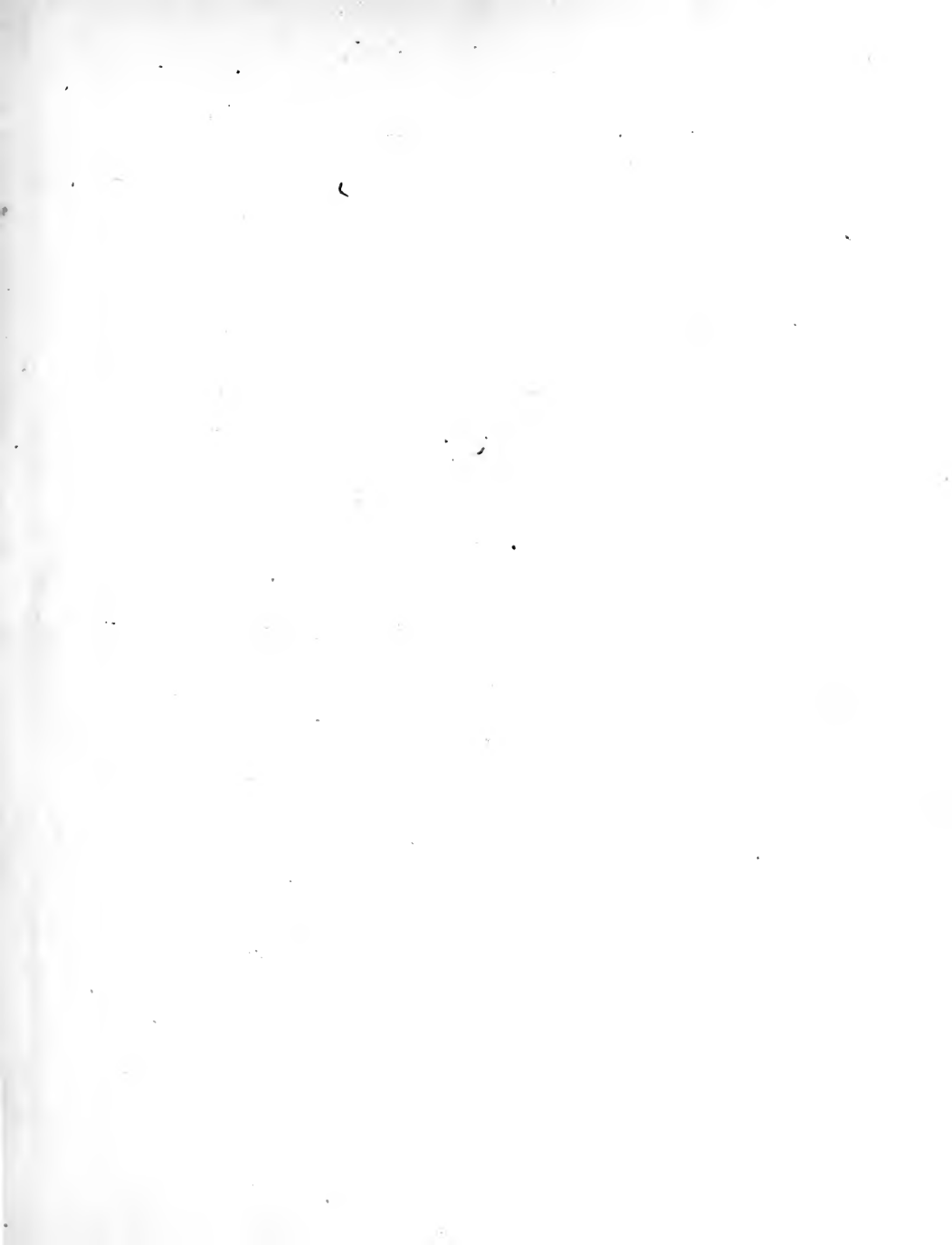
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ELEMENTARY GEOGRAPHY

SCHOOL • TEXT • BOOKS

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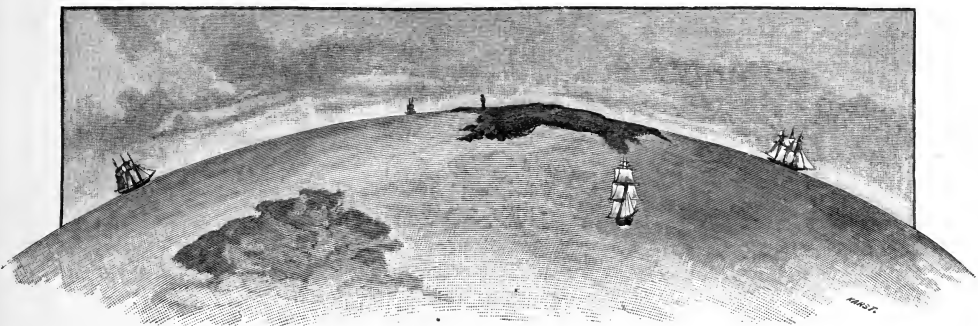
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ELEMENTARY GEOGRAPHY.



COMPILED UNDER THE DIRECTION
OF THE
STATE BOARD OF EDUCATION.



SACRAMENTO, CALIFORNIA.

PRINTED AT THE STATE PRINTING OFFICE.

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ACKNOWLEDGMENT.

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The State Board of Education desire to acknowledge the kind assistance of many prominent teachers of the state in the preparation of this book. For careful reading of the proof issued in pamphlet form for revision, and for valuable suggestions that have been incorporated in the finished work, thanks are especially due to Prof. A. E. Kellogg, of the Boys High School, San Francisco; Prof. J. B. McChesney, Principal of the Oakland High School; Mrs. L. P. Wilson, Principal of the Training Department of the State Normal School at San José; Miss Emily Rice, teacher in the State Normal School at Chico; Mrs. J. N. Hughes, teacher in the State Normal School at San José; Mrs. Julia B. Hoitt, Deputy Superintendent of Public Instruction; Hon. Job Wood, County Superintendent of Schools, Monterey County; James T. Stockdale, Principal of Public Schools, Monterey; and A. Norton, teacher, Gonzales.

PREFACE.

Geography memorized, as words, is perhaps the least interesting and least profitable of all school studies. Geography so taught that its facts become pictures is the most engaging and attractive of all.

The right study of Geography involves much exercise of the imagination, and its facts, beyond those of simple observation, can properly be presented only by calling in the agency of this faculty. No aim in the teaching of Geography can be true that does not recognize this.

In the preparation of this book it has been the constant effort so to present the text, question, and illustration as to engage this most powerful function of the mind. How far the effort has been successful only use can determine, and at best it can be but partially so without the intelligent and enthusiastic coöperation of the teacher. The book can do little more than point the way.

When the pupil enters upon the study of Geography two new exercises present themselves, namely: the apprehending of land and water forms and the reading of maps, which are pictures of these forms.

That the pupil may become able to grasp the ideas presented in the terms slope, hill, mountain, plain, valley, plateau, lake, river, ocean, continent, etc., he has been asked *first* to *see* the geographical forms that are in his immediate vicinity—to see, for instance, the hill, the valley, the upland field, the pond, the brook—and, *second*, to *imagine* the forms that these suggest—the mountain, mountain chain, broad plain, plateau, lake, river, ocean, etc.—and in this way reach an apprehension of the land and water forms of the earth. By observing the form of the ball or the orange he is led to imagine the earth as a globe.

That he may be able correctly to interpret the map much exercise is given in elementary map reading, not only to make him familiar with the signs employed to represent rivers, mountains, coast lines, cities, etc., but also to enable him to tell what these indicate in slope, climate, productions, fertility, and occupations.

The teacher should supplement the descriptive matter of the book by explanation, question, and story. To aid in this numerous references are given in connection with the text. These references have, to a great extent, been furnished by teachers of the State, and are made, largely, to books already in the district libraries. Care has been taken to avoid reference to expensive books, in order that the volumes recommended may be available for all district libraries.

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METHODS OF AWAKENING INTEREST

Very successful common school teachers have contributed the following plans, adopted by them, to awaken interest in the study of Geography:

1. Setting apart, Friday afternoon, an hour or half hour, which may be called The Reading Hour, during which teacher or pupils (preferably pupils) read extracts from books, magazines, or papers that relate to the subject studied in the Geography during the preceding week.

2. Placing upon the blackboard each morning a single question for the investigation of the pupil during leisure hours, such as "What plants are used to make clothing," etc. A valuable collection of such questions may be found in Frye's "Child and Nature," pages 82 to 116.

3. Asking pupils to bring in some object, as a piece of bread, leather, cotton cloth, tin, etc., and give its history, where produced, and how.



ELEMENTARY LESSONS.



I. IDEAS OF DIRECTION.

ORAL EXERCISE.

(1) Where does the Sun rise?

Let pupils stand with right hand to the East.

In this position teach direction of the **face**; of the **back**; of the **left hand**.

Pupil point to the North; to the South; to the West; to the East.

Face North; South; East; West.

Take one step North; one step East; one step South; one step West.

WRITTEN EXERCISE.

Pupils read and fill out the following skeleton with the proper words, orally, then copy and fill out in writing:

“When we stand with the — hand to the East our faces will be to the —, our — will be to the —, and our — will be to the —.”

[PRELIMINARY ORAL COURSE.—The preliminary oral course and the oral work throughout the volume constitute an essential part of this book. The results sought in the preparation of the Elementary Geography depend so largely upon a thoughtful and conscientious attention to the oral divisions, that their neglect will, in a considerable measure, defeat the objects aimed at. It is therefore earnestly recommended that the teacher give his best efforts to the successful presentation of this department. The pleasure of the pupil in studying and of the

teacher in teaching, will depend much upon this. Do not pass too hastily from one step to another. Let each be so thoroughly mastered as to become, so far as possible, a part of the habitual thought of the child. The minimum of telling and the maximum of judicious questioning should mark this work. (Read Parker's “How to Study Geography,” page 101.)]

ORAL EXERCISE.

(2) Teach semi-cardinal points as above.

WRITTEN EXERCISE.

Let pupils fill out the following skeleton as before:

“Northeast is half way between — and —, Northwest is — between — and —, Southwest is — between — and —, Southeast is — between — and —.”

ORAL EXERCISE.

(3) Teach direction of the sides of the house; of the ends; of cracks in the floor; of the door from teacher's desk; of the stove from the desk; of shadows in the morning, at noon, at sunset.

WRITTEN EXERCISE.

Fill out the following skeleton orally and in writing, as before:

“The sides of the house extend — and —, the ends extend — and —. The cracks in

the floor extend — and —. 'The door is — from the teacher's desk and the stove is —. In the morning the shadows fall —, at noon they fall —, and in the evening —."

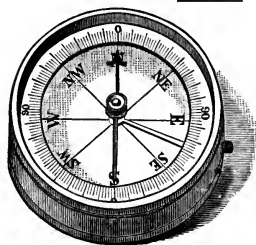
ORAL EXERCISE.

(4) Show compass¹ when possible to do so. Explain it. Show why it is a better guide to direction than the sun.

Teach direction of various objects in the school room from one another; of objects near the school house as, the nearest hill, the nearest tree, the nearest house; direction in coming to school; in going home.

Direction of north wind; south wind; east wind; west wind.

WRITTEN EXERCISE.



Fill out the following skeleton orally, and then in writing:

"A compass is a better guide than the sun, because —."

"A north wind blows from the — and toward the —, an east wind blows from the — and toward the —, a west wind blows from the — and toward the —, a south wind blows from the — and toward the —."

II. IDEAS OF DISTANCE.

[Let each pupil be provided with a foot rule divided into inches, half inches, quarter inches, and eighth inches. If this is impracticable, let each pupil make a

rule of pasteboard, or strong brown paper, from the measure stamped on the cover of the Geography.]

ORAL EXERCISES.

(1) Using the ruler, draw a line a foot long on the blackboard. Let each pupil do the same.

Erase and let each pupil draw a line that he judges to be a foot long. Measure each.

Draw again; measure.

Repeat a number of times.

(2) Let pupils each draw a line an inch long. Erase.

1 inch.

Let pupils draw lines judged to be an inch long. Measure.

Teach that 12 of these lines make a foot.

Let pupils draw 12 such lines.

Measure and see if they make a foot.

Repeat a number of times.

(3) Pupils draw 3 lines each judged a foot long. Measure.

Teach that 3 such lines make a yard.

Draw 3 lines each judged a yard. Measure.

Judge the length of the school room in feet. Measure.

Judge the width. Measure.

Judge the length of desks, blackboard, and other objects. Measure.

(4) Let each pupil take one natural step.

Measure the step.

Let pupils judge the length of the school lot.

Let each measure it by stepping.

Do the same with the width.

Let both length and width be measured by tape line. If you have no tape line take a string or make a yard stick from a piece of lath.

(5) Name the distance to your own home.

The direction and distance of the nearest post-office; the nearest church; the nearest creek.

¹ Reading Hour: *World at Home*, vol. I. p. 53, Les. 25, The Compass; p. 52, Les. 23, The Weather Cock.

How many yards wide is the nearest road?
Measure.

If the moon is just rising as the sun is setting what is the direction of a straight line joining them?

If a river runs S.E. and a railroad runs squarely across it, in what direction does the railroad run?

A ship sails north and is struck squarely on the left by a steamer and sunk; in what direction is the steamer going?

(6) *Distance represented by arbitrary length—Scale.*¹ If a well is 20 feet deep can I draw, downward on the blackboard, a line as long as the well is deep? Why?

If I draw a line 20 inches long, to stand for the well, how much will 1 inch stand for?

The teacher's table is 4 feet long; if I draw a picture of it only 4 inches long what will stand for 1 foot?

If 1 inch stands for 1 foot and the side of the house is 40 feet long, how long a line must I draw to represent the side of the house?

Introduce numerous examples, like the foregoing, of scale 1 inch to the foot.

Let pupils see how many they can make.

WRITTEN EXERCISE.

Let each pupil write an original example of a scale 1 inch to the foot.

ORAL EXERCISES.

(7) *Scale 1 inch to the mile.* Suppose 1 inch to stand for a mile how much will two lines, each an inch long (draw them on the board), stand for? Draw an inch line. Suppose that is the distance to the nearest house—how far is it?

Add an inch. That is the distance to the nearest church—how far?

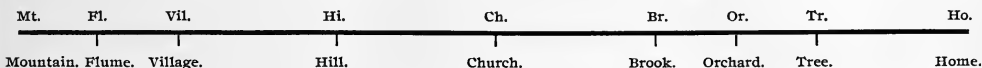
Add 3 inches. That is the distance to the nearest town—how far?

The distance to the seashore is 7 miles. How many inches shall represent it?

The distance to the nearest stream is $3\frac{1}{2}$ miles. How long a line must we draw for that?

Continue exercises like the preceding.

(8) Let each pupil draw a line 6 inches long; call each inch 2 miles; measure the distances and mark them, as on line below:



Let pupils determine distances from home to tree, to church, from church to village, to orchard.

See that they measure the line for themselves in each case. Get from them, in the same way, a dozen or more of the distances represented on the line.

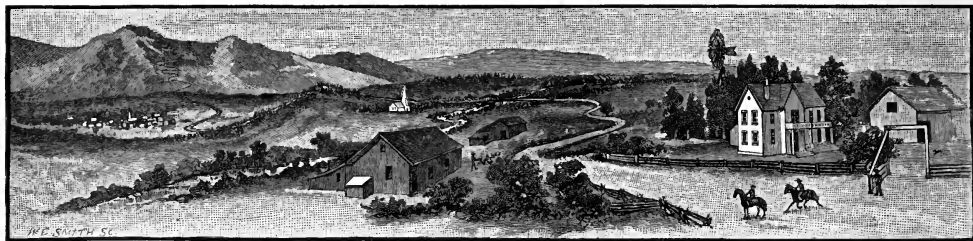
WRITTEN EXERCISE.

Pupils copy the following skeleton story and fill the blanks with the appropriate distances. In doing this ascertain the distances by measuring

¹ Reading Hour: *World at Home*, vol. I, p. 68, Les. 29, The Master's Portrait.

the line above, and not the road as seen in the picture.

One sunny Saturday morning my brother Charles and I mounted our ponies at home for a trip to the great mountain, — miles distant. — miles out we stopped at an orchard and filled our pockets with apples which the owner kindly gave us, and — miles further on sat down upon the steps of a church to eat them. We then climbed upon our ponies again, when, without our saying a word, the spirited little animals set off on a lope, never stopping to walk until they



reached the top of a distant hill — miles away. Here we stopped to let them breathe while we looked around us. Just below lay a pretty village which we guessed to be about a mile off, but which we were told, when we reached it, was — as far. Here we ate our lunch and fed our ponies and counted up the distance we had come. We were surprised to find that we had passed over — miles of our journey, while the mountain, though still — miles away, seemed to be almost at our feet. — further on we stopped to look at a new timber flume. When we reached the mountain we tied our ponies in the bushes and wandered about until we saw that the sun was getting low. Hastening to our ponies we sprang into the saddles and were off on a run. We flew through the village and galloped on to the hill. “— miles gone and — to go,” shouted Charles, while the ponies still kept up their speed. We drew up a few minutes at the church, however, which we called the — way house, because it was — miles from the mountain and — miles from home. Once more we were off, and — miles further we rattled across the bridge over the brook, saying to each other, “Only — miles more!” At 8 o’clock we trotted through the barn yard gate. Our ponies had traveled the entire distance of — miles without seeming a bit fatigued, though Charles and I were glad to get to bed as quickly after supper as we could.

ORAL EXERCISE.

(9) When the foregoing work is done easily let a line be divided into inch spaces each representing 3 miles.

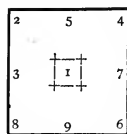
Mark it and question on it as before.

Then into inch spaces each line representing 4, 6, or 8 miles, and question.

[Before passing from this, see that the pupil is thoroughly familiar with the meaning of “scale” and its application to the measurement of lines. In this book, extent of country in lengths and breadths, wherever practicable, is taught by requiring the pupil to measure the map and apply the scale, and is *not* stated in the text.]

III. ELEMENTARY MAP READING.

(1) DIRECTION AND DISTANCE ON A MAP. Draw diagram like the following. Use the north board.



Teach that the **top** is *north*; **bottom**, *south*; **right hand**, *east*; **left hand**, *west*. They have already learned names of points between these.

Form many questions, as: Direction of 5 from 1, 1 from 9, 9 from 5, 4 from 1, 1 from 7, 4 from 8, 6 from 2; direction of boundary lines, etc. Let pupils form questions.

(2) MAP OF SCHOOL ROOM.¹ (a) Let pupils measure side of school room. Teacher write on

¹ Reading Hour: *World at Home*, vol. 1, p. 27, Les. 11, Drawing Plan of School Room.

the board the number of feet. Measure end of the room—write number of feet on the board.

(b) Have pupils draw line on slates or paper for the side of the room, drawing 1 inch in length for every 4 feet. (If the side is 24 feet long how many inches in the line? If 30? If 27?) Draw line for the end in the same way; draw line for the other side, the other end.

(c) Have pupils measure the space from one corner of room along the side to the first window, write distance on the board; measure the window, write distance on the board; measure next space along the wall and record it as before till all spaces and windows and doors are measured and the measures written on the board.

(d) Have pupils then measure the proper distance on the lines of their map and draw *double* lines for the walls, leaving single lines of the right length for windows and doors.

(e) By similar measurements get position of teacher's desk, chair, and waste basket, of stove, of the two outside rows of desks, and draw them in the manner shown below. Enlarge the scale four times and draw map on the board. Ask questions of the class on the large map, as:

Direction of stove from the door, from the teacher's desk, etc.

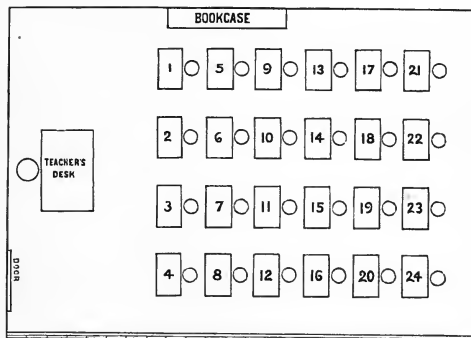
Let pupils ask similar questions.

Have pupils measure from corner to corner on the map, diagonally, and tell the real distance. On the map measure from teacher's desk to door, tell the real distance; make other measurements in same way.

Have pupils reproduce the map they have made till they can do it readily and understand all its points.

If impracticable to produce an original map, question pupils on the following map and let them copy it.

Questions on Map of School Room.—Which way does this school house front? On



$\frac{1}{4}$ of an inch = 1 foot.

which side of the school room is the bookcase? How long is it? How far from the west wall? From the east wall? In what part of the room is the teacher's desk? How far does it stand out from the wall? In what direction is desk 24 from desk 1? How far is the southeast corner of desk 1 from the northwest corner of desk 24? Which corners of desk 4 and desk 21 are nearest each other?

IV. IDEAS OF SURFACE FORMS.

[In giving elementary ideas of surface forms, a relief globe or relief wall maps¹ will be found of the greatest assistance. The teacher need not be discouraged, however, by their absence. What was said to the famous archer will then be true of him: "Thy skill will be the greater if thou hits't it," and the simple devices of an ingenious teacher, inspired by contact with his pupils, are often the very best illustrations possible. Have pupils illustrate their ideas of every surface form by a drawing, no matter how crude, upon the blackboard. However inartistic the result, the effort will be helpful. Ask pupils each day to bring pictures of the things taught in the following exercises. In most cases a large collection of excellent illustrations will soon be made.]

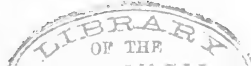
ORAL EXERCISES.

(1) SLOPES.² Are the tops of the school desks level?

What can we say of them in respect to this?

¹See Gypsall Relief Maps, Bay State Publishing Company, Hyde Park, Mass.

²See Frye's *Geography with Sand Modeling*, pp. 52, 53, 54.



Where have you seen a slope of land?

How many slopes can you count in the school yard?

Is there more than one slope on the desk top?

Open your Geography and turn it, cover up, on the desk, like this:



How many slopes now on the desk top?

By what is the longest of these slopes made?

How are the shorter ones made?

Are the slopes all in the same direction?

Does all the rain that falls sink into the ground?

Where does it go? Why?

How does the rain get into pools?

Can land slope in two directions at once?

Look at all the slopes that lie in your way to and from school and see if you find any lying in more than one direction.

See if you can stand your Geography on the desk in such a way that one side of the cover will slope in more than one direction at the same time.

Look for large slopes of land having smaller slopes within them.

Represent,¹ on a modeling board, some slope that you can see.

Note that, in Geography, a slope is always a *descent*.

(2) A HILL. If a hill is within sight call attention of pupils to it.

If no hill is to be seen from the school house have each pupil tell where he has seen one.

Is the hill higher or lower than the land around it?

Lead the pupil to *observe* (a) the base, (b) the top, (c) the slope.

Call attention first to the *part* then to the *name*.

By questions, if possible, lead pupils to define for themselves the hill as a *mass of land* higher than the surrounding country.

Have pupils represent, on a modeling board, some hill that they can see.

WRITTEN EXERCISE.

Read the following skeleton, filling blanks orally with the necessary words, then in writing:

"A hill is —. Its parts are the —, the —, and the —. The base of a hill is the — and the slope is the —. There is a hill about Distance. from the school house in a — direction, and another about — in a — direction."

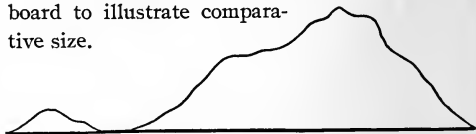
ORAL EXERCISES.

(3) A MOUNTAIN. Observe a mountain, if one is in sight.

Have the pupil mention any mountain he has seen and tell about it.

Where no mountain is in sight, let pupil *observe* a hill and lead him to imagine a mountain.

Make diagram of hill and mountain on the board to illustrate comparative size.



NOTE.—In the absence of a complete outfit of tables and modeling boards an oblong pie tin may be made to serve. Putty, dough, clay, or sand may be used. Where the school grounds are suitable, the representation of surface forms may be made in the earth of the school yard by the use of spade, trowel, or knife. When, later on, it becomes desirable to model school grounds, county, state, or continent, 1st, mark the boundaries; 2d, build up the mountains in their proper places, shape the slopes and valleys, scratch lines for rivers, scoop out hollows for lakes, and cut out places for gulfs and bays. When the material has hardened, water may be poured in to complete the illustration.

¹ See Fry's *Geography with Sand Modeling*, p. 29, last paragraph.

Have pupils represent, on the modeling board, some mountain that they can see, if any is in sight.

See picture of volcano, p. 15. What is a volcano?

(4) A MOUNTAIN RANGE. Where practicable have pupils observe a mountain range. Illustrate by diagram, as follows:



Lead the pupil by *questions* and observations to tell what it is himself.

Have pupils represent, on a modeling board, some mountain range that they can see. If none is in sight, build a range of mountains as the diagram suggests.

Teach what a **Mountain System** consists of.

WRITTEN EXERCISE.

Write this skeleton on the board, pupils fill blanks orally, then copy. Each blank may be filled by any number of words necessary:

"A mountain is — of land — hill. A range of mountains is — of mountains. A mountain system is — of mountain ranges. A volcano is —."

ORAL EXERCISE.

(5) A LAKE.¹ Find a pond, where possible, and lead the class to describe it: (a) water, *fresh or salt*; (b) land on all sides.

When this is done, step by step, have pupils write the description.

If no pond is accessible, let a place be scooped in the yard and pour in water.

Cut a channel from it to teach outlet.

Let the pupil imagine the pond to be enlarged, first, to reach some distant point in sight and, then, to reach as far in all directions as he can see, and in this way perceive what a lake is.

Ask pupils to bring into the class all the pictures of lakes they can find.

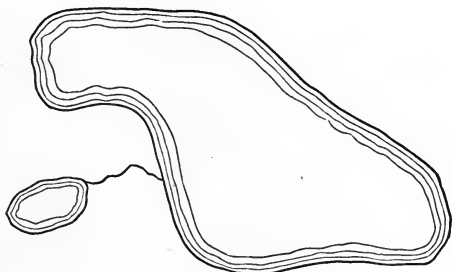


DIAGRAM OF POND AND LAKE.

Let them make a shallow depression in the mountains they have modeled and sprinkle it with white sand or ashes for a lake.

Have them represent, on the modeling board, some pond or pool that they have seen.

WRITTEN EXERCISE.

Write and complete the following; then memorize:

A lake is a Size body of —, usually —. It is — by land.

ORAL EXERCISE.

(6) A RIVER.¹ If a stream is within sight or can be seen by walking a short distance, have the pupil observe for himself:

- (a) The direction of its flow.
- (b) The direction from which it flows.
- (c) How the stream flows—straight or winding.
- (d) The edge of the river, or land that borders it.
- (e) Teach the term "shore," or "bank."
- (f) Show "right bank," "left bank," "bed."

¹ See Frye's *Geography with Sand Modeling*, p. 55.

¹ See Frye's *Geography with Sand Modeling*, pp. 56, 57, 58.

(g) Teach meaning of "source."

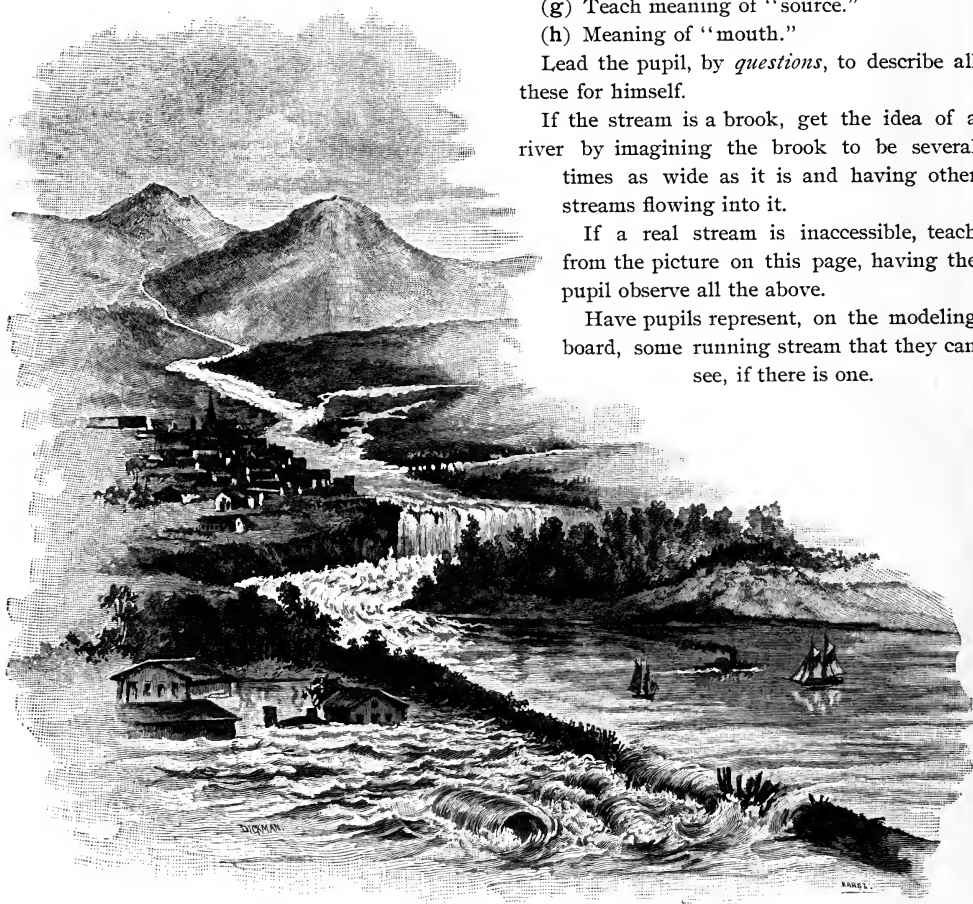
(h) Meaning of "mouth."

Lead the pupil, by *questions*, to describe all these for himself.

If the stream is a brook, get the idea of a river by imagining the brook to be several times as wide as it is and having other streams flowing into it.

If a real stream is inaccessible, teach from the picture on this page, having the pupil observe all the above.

Have pupils represent, on the modeling board, some running stream that they can see, if there is one.



WRITTEN EXERCISE.

Skeleton for pupil to fill out orally and copy. Fill each blank with as many words as are necessary:

A river is a Size winding — of —, — the land. Its source is —, its mouth is —. The shore, or bank, is —, the right bank is —, the left bank is —. The bed is —.

For Reading:

(7) You can see that the river bed must be a slope or the water would not run. When the slope of the bed is steep the water runs very swiftly, making the surface of the river rough, and this swift and rough flowing of the river is called *Rapids*.

Sometimes, also, the bed of the river drops suddenly downward like the side of a house, and the water plunges straight down over the edge, and is then called a *Waterfall* or *Cataract*.

Where the land along the river is very low it often happens that when the water rises the land is overflowed. To prevent this a ridge of stones, earth, and timber is built along the shore to keep the water in the bed of the river. This ridge is called a *Levee* (lev'ee) or *Dyke*. When the water breaks through the levee, as it does sometimes, the break is called a *Crevasse* (ere vâsse').

(8) QUESTIONS ON THE PICTURE OF THE RIVER.

Point out the source of the river. The mouth. Right bank. Left bank. The rapids. The cataract. The levee. The crevasse. On which bank of the river is the village? What name do you give to the water of the river just below the cataract? Would you think the land on the right side of the river below the rapids high or low? Why? Would you think the land above the cataract high or low? Below the rapids what name is given to the ridge of land along the right bank of the river? What is the opening made through it by the water called?

WRITTEN EXERCISE.

When the pupil has carefully studied the preceding questions and answered them let him copy and fill out the following letter:

Dear Cousin Emma:

I send you with this letter a picture of the village where we live, and of the — that runs by it, and of all the country from the — of the river in the — to its — at the sea. You will see that our village stands on the — bank of the —, a little above the —, and that the land on which it stands slopes in — directions, one towards the — of the — and the other towards its —. Above

the village you will see that the land on both the — bank and — bank slopes somewhat — towards the stream. Below the — the water runs very swiftly for a little distance, and, after we pass below the —, the land on the — is level and very low, so that the water of the — will often overflow it. To prevent this a — is built of — to keep the water in its —. Sometimes it happens that the water breaks through this —, and the opening it makes is called a —. The picture shows such a — and a number of houses partly under water. As you see, our village is on — land and in no danger.

Your affectionate cousin,

MARY.

ORAL EXERCISE.

(9) A VALLEY.¹ If within sight of one, lead the pupil by question and conversation to *observe*:

(a) Position of valley, as (1) the land between two hills; (2) the land along both sides of a river.

(b) Upper part of river valley (toward the headwaters).

(c) Lower part (toward the mouth).

(d) Slopes (1) in the direction the river runs; (2) slope toward the left bank; (3) slope toward right bank.

Let pupils turn to the picture of a river and point out the upper part of the valley, the lower part, and slopes.

Explain and show that the large land-slopes are not regular in descent, but are usually broken by elevations, making many slopes within slopes, and that therefore there will be many slopes in various directions within the three main slopes of a valley.

WRITTEN EXERCISE.

Skeleton for pupil to fill out orally; then copy:

A valley is — hills, or — a river; the upper

¹ See Frye's *Geography with Sand Modeling*, pp. 58, 59, 60.

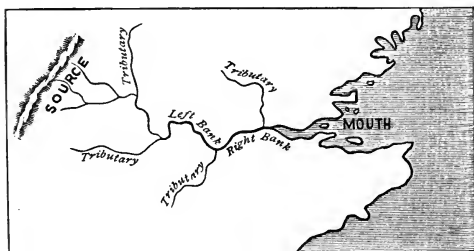
part of a river valley is the land —, and the lower part is the land —. The long slope of a river valley is the slope from — to —, and the short slopes are the slopes — banks.

ORAL EXERCISES.

(10) A RIVER SYSTEM.¹ If at or near the junction of two rivers, let the pupil *observe* that one flows into the other.

Teach that *a river with a number of rivers flowing into it makes a River System.*

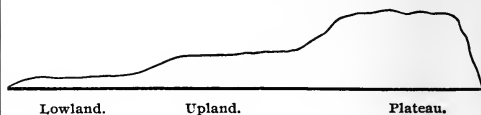
Have class draw the river system here outlined:



Teach that *a river flowing into another is called a Tributary.*

(11) By questions, lead pupils to see that *all the land from which the water of a river system is received is the River Basin.* Teach them to discriminate clearly between a river system and a river basin. Draw from them an oral statement of the difference. Have them write the difference, then put on the board the best statement of the difference given.

(12) A PLAIN. By actual observation show that it is (a) a level, or nearly level, tract of land. Where possible show also, by observation, that it may be (b) lowland, (c) upland, (d) high plain, or plateau (plā to'). Illustrate on the blackboard by outline like the following:



Questions.—Where have you seen a lowland plain? An upland plain? Have you ever seen a plateau? If so, tell where, and describe it.

(13) AN ISLAND. If in sight, let class observe it. By questions, lead pupils to describe it. Let each one tell where he has seen an island. Have him make an island out of sand or clay, on the modeling board. Look for an island in the picture. Contrast and compare an island with a lake. Write upon the board the definition and have it learned.

(14) A PENINSULA. If within a short distance the proper projection of land can be found, go with the class and look at it. Question them until from some of them all the characteristics of a peninsula are told. Afterward write on the board the best description given and have them copy it. If there is no better way at command let them look at the picture, p. 15, and describe the projection there. If there are streams or bodies of water in the neighborhood, ask pupils to find all the peninsulas they can on the road to school and in the vicinity. Inquire for several days what they have found; stimulate emulation in this, also in the discovery of the four following divisions.

(15) A CAPE. Teach the child to recognize a cape as you teach a peninsula—by observation of a real cape or from the picture.

(16) A GULF. Wherever a peninsula can be seen a gulf is almost always found. Teach, through observation, and lead, by questions, the child to describe it after seeing it or a picture of it.

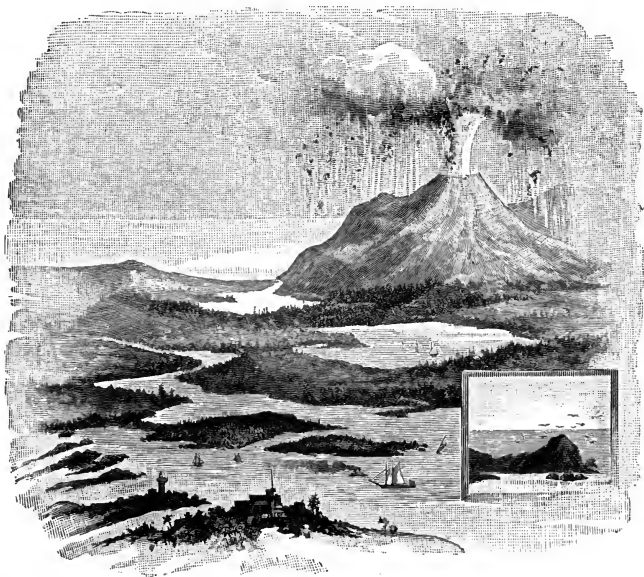
¹ See Frye's *Geography with Sand Modeling*, pp. 61, 62, 63.

(17) ISTHMUS (is'mus)—
STRAIT. Pursue the same
method as in teaching a gulf.
Compare an isthmus with a
strait.

In what are they *alike*?

In what do they *differ*?

(18) QUESTIONS ON THE
PICTURE. Make a list of all
the forms of land and water rep-
resented in this picture. What
form is represented in the lower
right hand corner? (*Ans. A*
Promontory.) What is a prom-
ontory? (*Ans. A high Cape.*)
How many peninsulas can you
find in the picture? How
many slopes? How many hills?
How many straits?



V. ELEMENTARY MAP READING.

MAP OF SCHOOL GROUNDS.¹ Procure a tape
line or a string of convenient length and let
pupils measure the school grounds. If the
grounds are not laid with marked boundary lines,
measure any convenient distance from the cen-
ter of each side of the school house and set a
stake.

Afterward adopt some convenient scale, as 20
ft., 40 ft., or 60 ft. to the inch, and draw a bound-
ary line of the grounds. In the center draw an
outline to represent the school house. Measure
distances of several objects (well, gate, coal or
wood shed) from the school house; write them
down and also note the direction. Draw outlines
of these in the proper places.

Note direction of other objects (a tree, stone,
hill). Measure distances as before and mark the
position of the objects on the map.

Question on distances and direction of various
objects from one another. Repeat the drawing.

WRITTEN EXERCISE.

*Have pupils write a description of their
school house and grounds on the plan below.
Assist them in getting necessary information:*

(a) KIND OF GROUND IT STANDS ON—hill;
slope, *direction of*; plain; valley.

(b) FACES which way.

(c) SIZE—number of rooms, closets, etc.

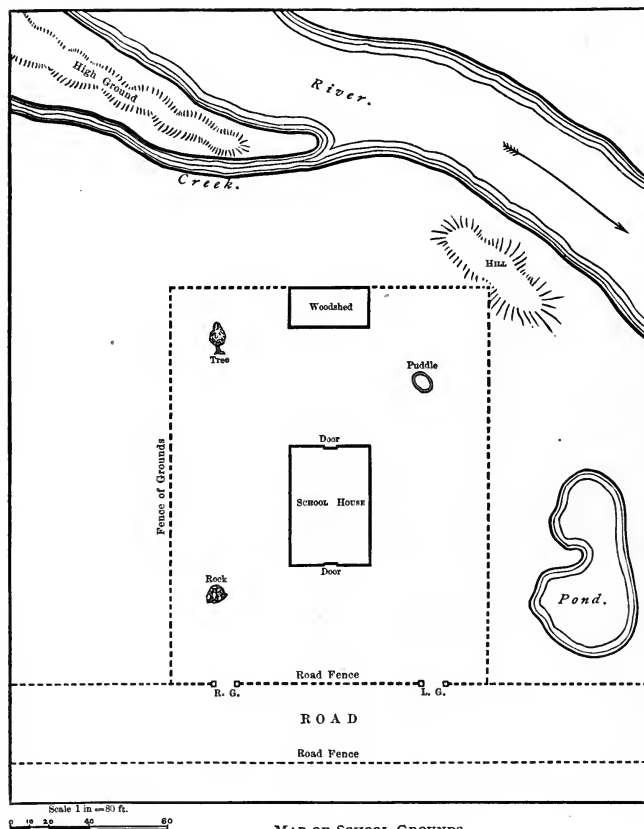
(d) MATERIALS OF WHICH MADE—brick or
stone, *where procured, how*; wood, *different
kinds, where found, how prepared*.

(e) SURROUNDINGS—pleasant or not, and why;
trees or stones in the yard, etc.

(f) Kind of wood in pupils' desks, in teacher's
desk; where obtained.

(g) WALLS—tinted, papered, clean, soiled, etc.

¹ Reading Hour: *World at Home*, vol. I, p. 33, Les. 14, Drawing
Plan of School Grounds.



MAP OF SCHOOL GROUNDS.

If impracticable to measure grounds let questions on the accompanying map be answered by the class with the book open, and let the map be copied.

Questions on the Map.—Which way does the school house face? How far from the door to the front fence? To the gates? In what direction is the right gate from the school house? How wide is the road? How many feet of ground on the south side of the road are included in the map? How far from the northeast corner of the house to the center of the puddle? How far from the northwest corner to the tree? From the tree to the rock? In what direction does the land slope between the school house and the puddle? How do you tell? Between the

hill and the puddle? Between the hill and the river? How many slopes are shown between the creek and the river? How are they shown? Is the line that separates these slopes on high ground or low ground? What is such a line called? (*Ans. A Watershed.*) Tell the difference between the two slopes on the opposite side of the river and the two slopes between the creek and the river. Which of the following pair of slopes



represents the slopes on the opposite side of the river? Should you think this school house stands on level ground or on a slope? If on a slope, what is its general direction? Find eight slopes shown on this map.

VI. STUDY OF COUNTY.

[These questions may be extended to suit the requirements of the course of study or the views of the teacher.]

Name of county. How bounded. Name streams. Give *direction of flow*. Name mountains, hills, ponds or lakes, valleys, forests, and give direction from school house; distance. Locality of best farming lands—on hills or plains or in valleys? Products. Mills and factories—direction and distance from school house. Name of county seat—direction and distance from school house. Trace with a pointer the road by which you go. Name streams, if any crossed in going to county seat. Mountains crossed.

VII. STUDIES ON STATE MAP.

Where is San Francisco? Sacramento? Direction of county from San Francisco. From Sacramento. By what road would you travel from your county seat to San Francisco? To Sacramento?



THE EARTH IN SPACE.

VIII. THE EARTH AS A WHOLE.

ORAL EXERCISE.

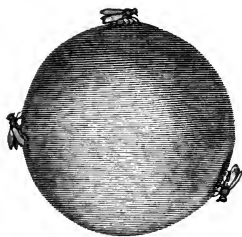
(1) SHAPE. Round—Show a globe, an orange, or a ball; teach that anything round like an orange is called a *globe*, a *ball*, or a *sphere*.

WRITTEN EXERCISE.

Write a sentence with the word *globe* in it.
Another with the word *sphere* in it.

Complete the following sentence and copy it;
then memorize:

"The Earth is — like a — or —."



ORAL EXERCISES.

(2) PROOF OF SHAPE.

Notice the fly on the top of the ball. Notice him in the nearest position toward the right. Has he turned a corner? Does his head point in the same direction as

at the start? Why?

In going to the next position has he turned a corner? Is he nearer the starting point than he was before? Why?

(3) Men have started to travel on the earth, and, without turning about and going back, have come again to the starting place. From this what should you think about the shape of the earth? In going round the world do men walk, as in the picture? How do they go?

Enlarge upon the last question by conversation with the class.

(4) A joint of stove pipe is round in one way. Could a fly come back to his starting place on the stove pipe without turning about?

If the earth were in the shape of a joint of stove pipe, only very large, as it is now, could men come back to a starting place without turning about?

When men come back to the place from which they started, without turning about, does it prove that the earth is round like a *ball* or *globe*?

In what shape might it be?

WRITTEN EXERCISE.

Write and complete the following sentence; then memorize:

"The Earth cannot be —, because men have traveled round it."

ORAL EXERCISE.

(5) Suppose you were to stand on an island in



the ocean and were to look east and see the top of the mast come in sight, but could not see the ship, would you think the ship to be on a level surface or on a curved surface?

Then if you looked west and saw a mast in the same way, then north, then south, what would you think about the shape of the earth—would it be round like a stove pipe, or round like a ball? Why?

WRITTEN EXERCISE.

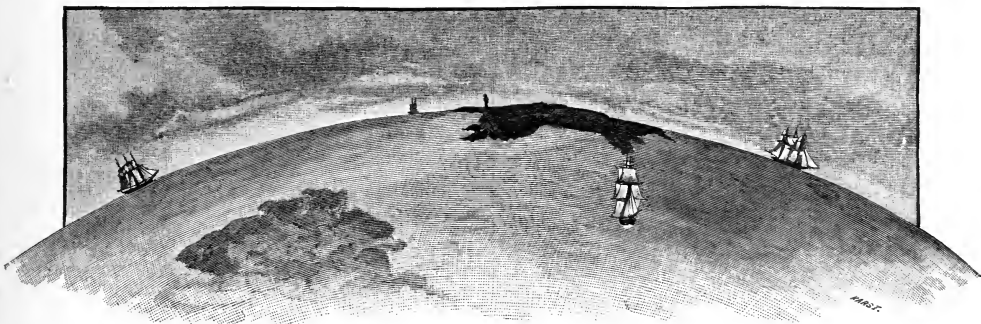
After thinking and talking about this, let the pupil write and complete the following sentence; then memorize:

"The Earth must be — like a — or —, because when we look at a ship far off upon the sea, coming towards us from — direction, we see the — first."¹

ORAL EXERCISE.

(6) SIZE OF THE EARTH. How far do you think it is around the Earth? If you should start to travel around it and should go twenty miles every day you would be 1,250 days in getting back to your starting point. How far is that?

¹ Reading Hour: *World at Home*, vol. II, pp. 14-18.



LOOKING AT SHIPS FROM AN ISLAND IN THE OCEAN.

The distance around the earth is called its *Circumference*.

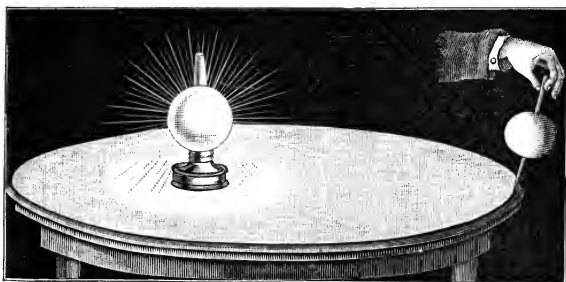
The distance through it is called its *Diameter*, and is 8,000 miles.

WRITTEN EXERCISE.

¹Write the following, fill it out, and commit it to memory:

“The distance around the earth is — miles, and is called its —. The distance through the center is — miles and is called its —.”

Write a sentence with the word *circumference* in it. Another with the word *diameter*.



WRITTEN EXERCISE.

Write this sentence and complete it; then memorize:

“The earth turns round on its axis once in — hours, making —.”

For Reading:

(7) MOTIONS OF THE EARTH.² Think of a top spinning before a lamp. The earth spins or turns in the same way before the sun, except that it turns in the air. This is one of its motions, and is called the *Rotation of the Earth on its Axis*. It is this motion that gives us day and night. We go with the earth, and when the place we are on is toward the sun, we have day; when it

(8) Now think of a top spinning before a lamp on the edge of a table shaped like the one in the picture; then think that while it spins it is also moving around the lamp along the edge of the table. The earth moves in the same way around the sun. This is the other motion and is called

¹Reading Hour: *World at Home*, vol. II, pp. 23-25.

²Motions of the earth may be omitted until later, if the teacher finds it advisable.

The Revolution of the Earth around the Sun. It does not stop spinning, but it moves along the curved line at the same time. While going once around the sun it turns on its axis 365 times. Now, stop and think how many days that means.

WRITTEN EXERCISE.

Write this sentence and complete it; then memorize:

"While going around the sun the earth turns round on its axis — times, making — days, which we call one —."

For Reading:

(9) While the earth is going around the sun, as the top goes around the lamp in the picture, it turns itself toward the sun in such a way that most places have *very cold weather* part of the year, then *warmer weather*, and then *hot weather*, then *cooler weather*, and then *very cold weather* again.

WRITTEN EXERCISE.

Write the following, putting only one word in the place of each set of italic words above:

"Most places have — part of the year, then —, and then —, then —, and then — again."

For Reading:

(10) Can we see the whole earth from any place upon it? Can we see a great part of it? How, then, can we know how it looks. Men have traveled over it and made maps of it. We can see these maps, and in that way we can see where the long mountain systems are, the largest and longest rivers, the great slopes, hundreds of miles long, and the valleys, so wide that a boy on his pony would be weeks in crossing one. But the maps do not really show how these things look. You must look at the hills and small valleys and short slopes that you *can* see, and try to imagine them growing and growing, hundreds of

times as large as they are, to make the great mountains and large valleys and long slopes that you can *not* see, but which make up the earth and which are pictured on the map.

(11) You can do another thing. You can imagine yourself to be very high above all mountains and to be flying like a bird, around the earth and looking down upon *great bodies of land composed of long slopes and great river basins separated by long ranges of mountains*, sometimes running north and south and sometimes east and west. These great bodies of land are called *Continents*. You would be looking down on great bodies of water, also, much larger than the land, and these are called *Oceans*, and their water is *salt*. You would see them washing the shores on all sides.

For Recitation:

Continents are great bodies of land composed of long slopes and great river basins, separated by long ranges of mountains.

Oceans are the large bodies of salt water that surround the continents.

(12) HEMISPHERES. If you could go high enough and could see far enough you might see half the earth at one time. When the sun shines upon it you would find one half looking something like this:



It is called the western *half-sphere*, or *Western Hemi-sphere*. The large body of land in it is called the *Western Continent*.

What do you think *hemi* means? Which way do the great mountain ranges of the Western Continent run—north and south or east and west? Is there more water or land in this hemisphere?

Now if you should wait till the other side of the earth is rolled toward the sun you would find it looking much like this:



This is called the *Eastern Hemisphere*, and the great body of land in it is called the *Eastern Continent*.

Which way do the large mountain ranges of this half run—north and south or east and west? Is there more water or land in this hemisphere?

If you would like to know how large part of the earth's surface is land and how large part is water, this diagram will tell you. Examine and measure it, and decide for yourself:

Land.	Water.
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Now that you have measured it, what do you decide?

IX. HEAT.

For Reading:¹

If you were to be asked where all the heat on the surface of the earth comes from, you would probably answer, "from the sun." Let us see how the heat behaves.

In the morning, as the sun rises, the heat that comes from it glances along the surface of the earth, as you might skip your ball. It does not strike very hard, and the air does not get very warm. When the sun is nearly overhead the heat goes into the earth around us instead of glancing off. It is thrown from the sun so fast that the air does not catch much of it as it goes through, but the earth throws it back more slowly and then the air becomes heated.

Did you ever stand at the side of a brick or stone or even a wood house when the sun was shining on it in summer and notice how hot the air was there? Did you ever go a little distance away from the house and notice that it grew cooler? Why was it warmer near the house?

The earth is like the side of the house; it throws back into the air the heat received from the sun, and the air that is nearest to it receives a larger part of the heat than the air further away. If, then, you could rise in a balloon several thousand feet from a plain on the earth, would you find it warmer or cooler? If, when you were so high, your balloon should light on a mountain top, you would expect still to find the air cooler than on the plain, would you not? There are many parts of the world where the low plains are hot and the mountains and high plains, or plateaus, in the same region, are very cool, some mountains being so high that they are always covered with snow.

For Recitation:

1. The sun pours heat through the air into the

¹Articles entitled "For Reading," should be made the subject of conversation until the pupil thoroughly understands them. The summary, "For Recitation," may then be committed to memory.

earth and the earth gives it back to the air. The greatest heat is received where the sun is directly opposite the place on which it is shining.

2. There is more heat in the air near the surface of the earth than far away from it. High mountains and plateaus are cool when the plains below them are warm or hot.

X. MOISTURE.

For Reading:

If you place a piece of ice in a basin in the sun, in a short time you will find it gone. It has become a liquid which we call water. We say the ice has *melted*.

If you place a basin of water where the summer sun will shine upon it, in a few hours you will find it gone. What has become of it? It has passed into the air in the form of vapor. We say it has *evaporated*.

Did you ever see a fog? Where? Did it rise from the sea or the land? When the sun shone hot after a rain, did you ever see steam rising from the top of a house or barn or from the sidewalk or the ground? All this fog or steam we call vapor, or moisture, and, though enough of it to be seen does not often rise at once, this vapor is constantly going up into the air from the ground, from rivers, ponds, and lakes, and from the ocean.

Why does not all the water from the soil, the rivers, and lakes, and from the sea finally go off in this way and leave the beds of the streams and of the ocean dry? Read a little further and you will learn why.

See a pitcher of ice water in the summer with the drops of water on the outside surface. The water did not come through the pitcher. How did it get there? The cold pitcher has turned the vapor that was *in the air* next to it into water drops.

See the dew on the grass and the trees in the

morning. The surface of the earth at night is cooler than the air next to it, and has turned the moisture *in the air* to water, as the surface of the cold pitcher did. Besides this, it has cooled the layer of air next to it, and the vapor that rose from the earth and from the leaves of the trees in the night has been turned into water drops by this layer of cold air before it could rise from the grass or the leaves. If the night had been cold enough the vapor would be frozen, and there would be frost instead of dew.

See the clouds gather and the sky grow dark and the rain begin to fall. Whence did it come? The thin vapor that the heat of the sun carried from the ocean and the lakes and the rivers into the air has met a layer of cold air, at some distance above the earth, and has been turned by it into water drops that filled the clouds and that are now falling to the earth. We say the vapor has been *condensed* into water. If the layer of air is cold enough the vapor that rises will become snow.

When the vapor rises very rapidly so that it reaches a high and very cold layer of air before it freezes, it condenses into ice pellets called *hail*. To produce this rapid rise of the vapor, great heat is required and for this reason hail storms usually occur in the warm season of the year and in the hottest part of the day.

In these ways the water that has been *evaporated* by the heat of the sun and carried upward in the air is *condensed* and returned again, in dew and rain, frost and snow, to the earth and the sea, thus preventing the streams and the ocean from drying up.

The water of springs, rivers, and lakes is all first taken from the sea in vapor. When this vapor cools and the rain falls upon the earth, springs, rivers, and lakes are formed. Thus you will see that the ocean is the source of all the moisture of the earth, as the sun is the source of all the heat.

For Recitation:

1. The heat of the sun takes up moisture from the sea and the earth in the form of vapor, which floats in the air.

2. The surface of the earth at night cools the air next to it, and turns its moisture to water drops, called dew. This cold air also condenses into dew the vapors that rise from the earth, and in this way part of the moisture taken up by the sun's heat is returned to the earth.

3. The cold air above our heads condenses into rain drops the vapors that have been taken up from the earth and the sea by the sun's heat. These rain drops fall to the earth and help to keep up its moisture, and to keep its streams, lakes, and oceans from becoming dry.

4. The ocean is the source of all the moisture of the earth.

*Write a sentence, using the words **heat, water, evaporated.***

*Write a sentence, using the words **vapor, condensed, water.***

XI. CLIMATE.
For Reading:

Climate is the name for a condition of the atmosphere with respect to the amount of *heat* and *moisture* it contains. Some places have a hot climate, others a cool climate, and still others a cold climate; some have a moist and others a dry climate.

In most places, as you have already learned, the climate changes with the seasons of the year.

On low or very large plains in those parts of the world where the sun at noon is nearly or directly overhead, the climate is hot. On high mountains in the same region, as you have learned, it will be cool.

Winds often carry air loaded with vapor a long distance into cooler currents of air, or against cold mountain sides, where the moisture is condensed into rain, thus giving countries at a distance from the sea a moist and agreeable climate.

When this vapor is blown against mountains it is sometimes stopped by them, preventing countries on the opposite side of the mountains from receiving rain.

Mountains sometimes stop the cold winds that blow against them, thus giving a warmer climate to countries on the opposite side.

You see, therefore, that winds and mountains, though they cannot produce either heat or moisture, have much to do with making the climate of a place dry or moist, warm or cool.

Another very interesting and important thing about climate you may learn for yourself. Take a bucket of water and a bucket of sand and place them side by side in the sun on the morning of a hot day. At noon the sand will be much hotter than the water. Why? Because the earth takes in heat much faster than the water.

Now let both buckets stand till midnight or till near morning of the next day. The water will now be warmer than the sand. Why? Because the sand throws out the heat it has taken in much faster than the water, and therefore cools quicker.

Now think of the ocean as a great bucket of water and the continent as a great bucket of sand. In the summer days the continents will take in heat much faster than the ocean, and become much hotter. Therefore, if you live near the ocean, where the air from it can reach you before it is heated by the land, you will find a cooler climate in summer than if you live far away from it.

In the cold weather of winter the continent throws off its heat much faster than the ocean, and therefore becomes cold much sooner. If you now live near the ocean, which at this season



is much warmer than the land, you will find the air around you less cold than if you lived far away.

You may thus discover that the nearness of a place to the ocean, or its distance from it, has much to do with its climate.

For Recitation:

1. In those parts of the world where the sun at noon is nearly or directly overhead, the climate on low or very large plains is extremely hot.

2. Winds sometimes carry vapor from the ocean to places at a distance, where it is condensed into rain by cold currents of air or by high mountains.

3. Countries on one side of mountain ranges are sometimes without rain, because the mountains stop the vapor blown against them on the opposite side.

4. Countries on one side of a mountain range are sometimes much warmer than countries on the other, because the mountains have kept off the cold winds from that side.

5. Countries near the sea coast have a cooler climate in summer and a warmer climate in winter than those far away from it.

HOME QUESTIONS.—Where you live, is the climate hot or cool? Moist or dry? What is the difference between the summer and winter climate, where you live? Where you live, what winds are hottest? What winds are cool? What winds usually bring rain? Can you get any one you know to tell you why?

XII. BELTS OF CLIMATE CALLED ZONES.

A strip, or belt, of the earth, very wide from north to south, and extending all the way around the globe from east to west, lies directly opposite the sun. Such a belt, you know, must be very hot. Because it is so hot it is called the *Torrid*

Zone. (*Torrid* means *hot*, and *zone* means *belt of country*.)

The parts of the earth farthest north and south from the *Torrid Zone* are the coldest regions. This is because the sun's rays strike them obliquely, that is, slantingly, as you see in the picture. They are called *Frigid Zones*. (*Frigid* means *very cold*.)

Between the *Torrid* and the *Frigid Zones* are broad belts of country neither extremely hot nor extremely cold, called *Temperate Zones*.

The *Torrid Zone* is distinguished for the size and beauty of its trees and flowers, for its spices and rich fruits, and the strong odor of its plants. The mahogany, palm, coffee, and cinnamon trees, the banana, pineapple, and sugar cane flourish in this zone. The largest animals are found amid its luxuriant vegetation, and the forests swarm with birds of brilliant plumage, insects, and reptiles.

The *Temperate Zones* are distinguished for their abundance of the fruits and grains most useful to man, for forests producing timber best adapted to the building of houses and ships and the manufacture of furniture, and for plants adapted for clothing, such as cotton, flax, and hemp. In this zone wild animals are less numerous than in the *Torrid Zone*, but the more useful animals, such as the horse, cow, sheep, and deer, are abundant.

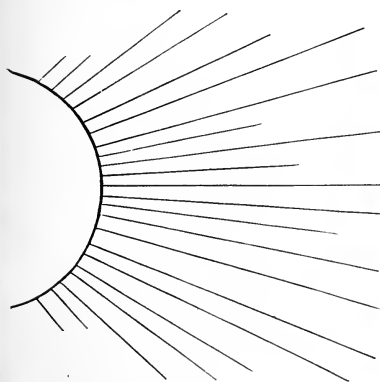
The *Frigid Zones* produce nothing but mosses and lichens, except in the more temperate parts, where a little barley and rye are grown, and a few pines and other hardy trees are found. Comparatively few land animals are found in this zone, but sea fowl are very numerous, and the sea abounds with the whale, seal, and walrus.

For Recitation:

QUESTIONS.—Why is the *Torrid Zone* hot? Why are the *Frigid Zones* coldest? Why are the *Temperate Zones* neither so hot as the *Torrid*

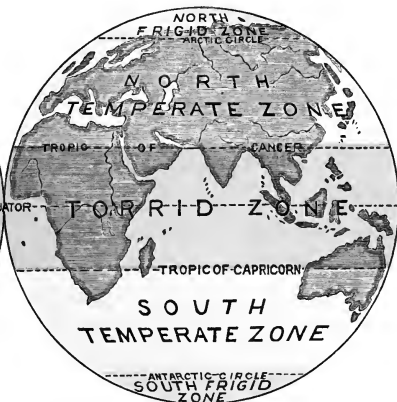
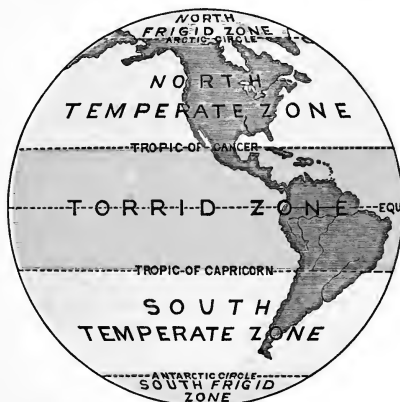
Zone nor so cold as the Frigid Zones? What is said of the vegetation of the Torrid Zone? The animals?

Vegetation of the Temperate Zones? Animals? Vegetation of the Frigid Zones? Animals?



Questions on Picture of the Zones.—What is the name of the zone farthest north? Farthest south?

Where is the South Temperate Zone? The North Temperate Zone? Name all the zones from south to north.



From the Torrid Zone north. From the Torrid Zone south. In which zone do you live? (Ans. North Tem-

perate Zone.) Between what zones does the Torrid Zone lie? The North Temperate Zone? The South Temperate

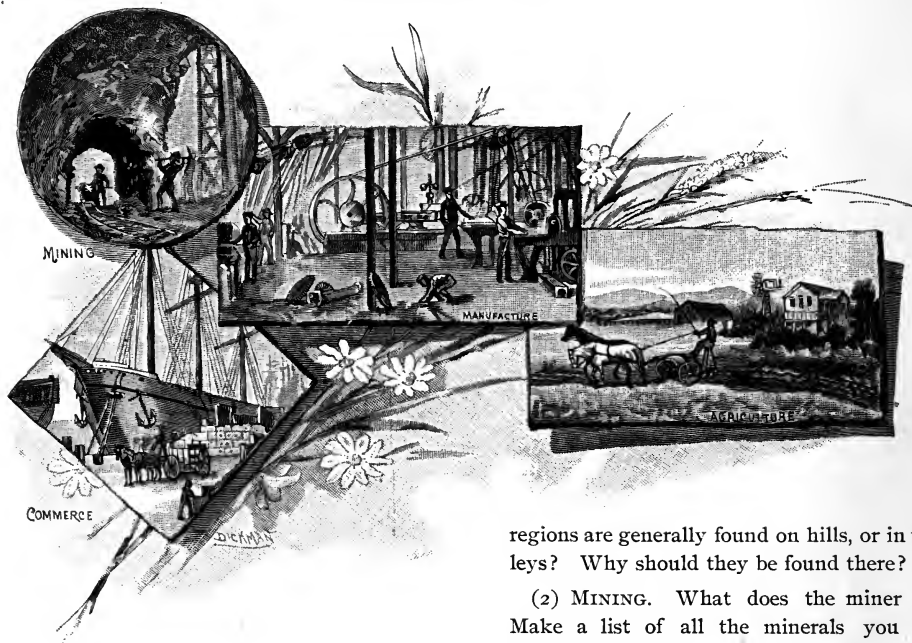
Zone? In which zone do you see fierce wild animals? In what zone do you see animals useful for food or work? Which zone looks pleasantest? Why? What do you see in the North Frigid Zone?

Write a description of the zones from the picture of them.

Questions on Map of the Zones.¹—Is the Equator nearer the North Pole or the South Pole? Measure and see. *Where*, then, should you say the Equator is?

What, then, should you say the Equator is? What two lines south of the Equator? Which of them is nearer the Equator? Between what lines is the South Temperate Zone? The Torrid Zone? The North Temperate Zone? What line bounds the North Frigid Zone on the south? What line bounds the South Temperate Zone on the north? If you were to pass from one zone to another, would you see these lines? Why? Draw a map of the zones from memory.

XIII. OCCUPATIONS.



ORAL EXERCISE.

(1) **FARMING.** What is the business of the farmer? Make a list of all the products of the farm and garden that you can think of. What are these products called? (*Ans. Vegetable Products.*) Are the farms you know of on sloping or level ground? Do you think farming

regions are generally found on hills, or in valleys? Why should they be found there?

(2) **MINING.** What does the miner do? Make a list of all the minerals you can think of. Have you ever seen a mine? What kind of a mine? Where? What are the products of mines called?

(3) **MANUFACTURING.** Name all the manufactured articles that you can think of. What are all such articles called? Name three things that drive the machinery in factories. 1. —. 2. —. 3. —.

(4) From the following list select the manu-

¹ Reading Hour: *World by the Fireside*, p. 14.

factured articles: Wheat, cloth, stoves, butter, iron, wool, milk, flour, cotton, rice, cheese, pudding, starch, wine, potatoes, grapes, raisins, horseshoes, leather, cattle, 'hides. Tell from what each is made.

WRITTEN EXERCISE.

Choose from the three following subjects and write as fully as you can upon it:

1. A description of what I have seen men doing on a farm.
2. A description of what I have seen men doing in a mine.
3. A description of what I have seen people doing in a factory.

ORAL EXERCISE.

(4) COMMERCE. Name all the useful things you can think of that come from other states or countries. Name all the things you can think of that are produced in this state and that are taken to other states and countries to sell. How do the things that come from other countries or states get here? How are the things that we produce taken to other states and countries? What is the business of exchanging these things called? Name all the *classes* of people you can think of that are employed in order to make these exchanges.

WRITTEN EXERCISE.

Write a short composition that shall answer all the above questions and read it for the next recitation.

ORAL EXERCISE.

(5) THINGS THAT FAVOR DIFFERENT OCCUPATIONS. What are fertile lands? Barren lands? Where the slopes are long and gradual and the rivers slow, making the valleys large, what kind of land, fertile or barren, should we expect to find? What should we expect to find most of the people doing?

Where the slopes are shorter and steeper, and the rivers swift, with frequent rapids, what should we expect to find many people doing? Why?

In what kind of country should we expect to find mining?

In a country with an uneven coast line, having many inlets and harbors, what branch of industry should we expect to see flourish? Why? What is a harbor? What harbors do you know of in this state?

WRITTEN EXERCISE.

Write what you have learned in studying the last exercise and read it for the next recitation.

REVIEW QUESTIONS.

1. What is a slope? A hill? A mountain? A mountain range? A lake? A river; right bank; left bank; bed; source; mouth; rapids; levee; crevasse? A river system; tributary? A river basin? A watershed? A plateau?

2. What is an island? A peninsula? A gulf? An isthmus? A strait? Compare an island with a lake. Compare a gulf with a peninsula. An isthmus with a strait. Define a continent. An ocean. What is the difference between lake water and ocean water?

3. What is a hemisphere? Into what hemispheres is the earth usually divided? What is the large body of land in the Western Hemisphere called? In the Eastern Hemisphere? How large a part of the earth's surface is land and how large a part is water?

4. Why is it hotter at noon than in the morning? Why is it hotter near the surface of the earth than it is several thousand feet above it? From what source does the earth receive moisture? When moisture is solid, what do we call it? When it is liquid, what do we call it? When water is evaporated, what do we call the moisture? When moisture floats in the air, is it solid, liquid, or vapor? How does it become liquid? Why is it sometimes true that the climate on one side of a mountain range is very wet, and on the other very dry? How do mountains sometimes give a warm climate to the countries on one side of them?

Name the zones in their order, beginning with the most northerly. Between what lines is the Torrid Zone? What line divides it in the center? Which is the hottest zone? Why? Which are the coldest zones? Why? Which are the best zones to live in? Why?

XIV. REVIEW OF ELEMENTARY MAP READING.

[In the study of this map, the knowledge to be gained of California is merely incidental, the primary object being, simply, to give additional exercise in map reading before taking up the general map studies of the book. Hold pupils to this work till they read accurately and quickly all that is called for by the questions. It is not designed that the answers should be memorized.]

QUESTIONS.—Point north on the map; south; west; east. Point to water; to land. Trace, with pencil, the line of land bordering the water; what name do you give to it? Point to mountains and name them; to other mountains. Trace, with pencil, the mountains on the east side of the state; the west side. Point out three rivers and name them. Where is the source of each? Trace each to its mouth. Tell direction of mouth from source.

Point out and name three lakes and tell in what part of California each is. Point to San Francisco; to Sacramento; to three towns near San



Francisco and name them; to three towns in the southern part of the state and name them; to three towns in the northern part of the state and name them; to Mt. Shasta. Trace the Sacramento River from Mt. Shasta to Sacramento. In what direction does it flow? Do you go up hill or down from Shasta to Sacramento? From Colusa to Sacramento? How do you tell? From Marysville to the Sacramento River? From Placerville? From Colfax? From Jackson? From Oroville? From San Andreas to Stockton? Do the rivers on the east side of the Sacramento River run from the Sacramento to the mountains or from the mountains to the Sacramento? In what direction does the land slope between the eastern mountains and the Sacramento? In what direction does the land slope between the western mountains and the Sacramento and San Joaquin Rivers? How does the land slope between

Santa Ana and San Bernardino? Between Wilmington and Los Angeles? How can you tell by the map which way the land slopes? Is Los Angeles or San Diego on higher ground?

PRONUNCIATIONS.—Cōl fax; Lōs An'ge lēs (lez); Plā'cer ville; San An'dreas; Sān Ber nar dī'no; San Joaquin (san wah keen').

R.D. Servon, Eng'g, N.Y.

TOPICAL OUTLINE OF ELEMENTARY LESSONS FOR USE BY THE TEACHER.

- Direction { 1. North { 1. Northeast.
2. Northwest.
2. South { 1. Southeast.
2. Southwest.
3. East.
4. West.

- Direction of { 1. Wind currents—*from*.
2. Water currents—*toward*.

- Guides to Direction { 1. Sun.
2. Compass.

- Distances { 1. Actual { 1. Measuring.
2. Judging.
2. Arbitrary, Scale—Computing.

- Map Reading for { 1. Direction.
2. Distance.

- Surface Forms { 1. Land { 1. Slope. 2. Hill.
3. Mountain.
4. Mountain Range.
5. Mountain System.
6. Valley—Basin.
7. Plain—Plateau.
8. Island.
9. Peninsula.
10. Cape. 11. Isthmus.
2. Water { 1. Lake.
2. River { 1. Rapids.
2. Cataract.
3. Crevasse.
3. River System.
4. Gulf. 5. Strait.

Map Reading for—Surface Forms.

- The Earth as a Whole { 1. Shape—proof.
2. Size { 1. Circumference.
2. Diameter.
3. Motions { 1. Daily—*how* { 1. Day.
2. Night.
2. Yearly—*how*—Seasons.
4. Hemispheres { 1. Eastern.
2. Western.

- Climate { 1. Heat.
2. Moisture.

- Zones { 1. Torrid { 1. Location.
2. Vegetation.
3. Animals.
2. Temperate { 1. North—*location*.
2. South—*location*.
3. Vegetation. 4. Animals.
3. Frigid { 1. North—*location*.
2. South—*location*.
3. Vegetation. 4. Animals.

- Occupations { 1. Farming—*Conditions of*.
2. Mining—*Conditions of*.
3. Manufacturing—*Conditions of*.

- Map Reading for { 1. Direction.
2. Distance.
3. Surface Forms.
4. Towns and Cities.

THE NEW WORLD—WESTERN HEMISPHERE.

The lines that run north and south on this map are called MERIDIANS.

The lines that run east and west are called PARALLELS of LATITUDE.



QUESTIONS ON THE MAP.—I. How many oceans do you find in this hemisphere? Write their names. Which is farthest north? In what zone is it? Which farthest south? In what zone? Which lies in the eastern part of the hemisphere? In the western part? What strait connects the Arctic Ocean with the Pacific? In what direction is the continent of this hemisphere longer—north and south or east and west? On which side of the Equator is the larger part of it? Into what two Grand Divisions is it divided? What isthmus joins them? Which of these Grand Divisions do you think is the warmer? Why? The longest range of mountains in the

world lies along the western coast of this continent. What is the part of it in North America called? In South America?

2. Write the name of a river in North America that flows north. That flows south. That flows west. In what zone is the mouth of the Mackenzie River? Would you think the river navigable? Why? In how many and what zones is North America? Write the name of a river in South America that flows south. That flows east.

ABBREVIATIONS.—I., Island; Is., Islands; R., River; Pt., Point; Sd., Sound; Str., Strait; C., Cape; G., Gulf.

PRONUNCIATIONS.—An 'des (dîz); Bê' ring; Pân 'a mǎ.

THE OLD WORLD—EASTERN HEMISPHERE.



QUESTIONS ON
THE MAP.—I. Write
the names of the oceans
you find in this hemisphere.
Which of these did you find in
the Western Hemisphere? What ocean is
wholly in the Eastern Hemisphere? What bay and seas
cut into the land from this ocean? Through what strait
does the Red Sea cut into the land? What gulf, bay, and
seas cut into the land from the Atlantic Ocean? What
sea passes in through the Strait of Gibraltar? What
seas cut into the land from the Pacific Ocean?

2. What are the three Grand Divisions of the Eastern
Continent? By what water is Europe separated from

Africa? What
water between Eu-
rope and Asia (a'she-a)?
Between Africa and Asia?
Write the names of four islands
between Asia and Australia.

3. Write the name of a river in Europe that flows north.
That flows east. That flows south. Write the same of
rivers in Africa. Write the names of three rivers of Asia
that flow north. Three that flow east. Two that flow
south.

PRONUNCIATIONS.—Ben gal' (gaw'l); Bāb el mām'deb; Bōr'ne o;
Cē'l'e bes; Jā'va; Su(soo) mā'tra.

QUESTIONS ON BOTH HEMISPHERES.—Which Grand Division of the world extends farthest north? Which farthest south? Which is longest from east to west? Which from north to south? Which extends farther south, North America or Asia? Which extends farther north, South America or Africa? Which two Grand Divisions have the smoothest coast line?

In what direction from North America is South America? Europe? Asia? Africa? In what direction from South America is Europe? Asia? Africa? In what direction from Africa is Europe? Asia?

Reverse each question in the last paragraph.

WRITTEN EXERCISE.

Review the first group of questions on the map of the Western Hemisphere; then copy and fill out the following outline with the information obtained:

"I find — oceans in the Western Hemi-

isphere, the —, the —, —, —. Of these — is farthest — and lies in the — zone; the — is farthest — and lies in the — zone; the — is on the — side of the hemisphere and the — on the —. The continent is longest from — to — and the greater part lies — of the Equator. It is divided into the — — of — — and — —, which are joined by the —. — — is the warmer of these — — because —. The long range of mountains along the western coast receives the name of — mountains in — — and — mountains in — —."

In a similar way, write a short composition to tell what you have learned from answers to questions in the second group.

RACES AND CONDITIONS OF MEN.

For Reading:

People in different parts of the globe differ in color of skin and in general appearance. Those alike in these respects are said to belong to the same **Race**.

There are five races¹ of men—the **Caucasian** (cau cā'sian), or white race; the **Mongolian** (mon-gō'lian), or yellow race; the **Malay'**, or brown race; the **Ethiopian**, or negro race; the **Indian**, or copper-colored race.

The Caucasian is found nearly everywhere, but is most numerous in Europe and America, where it is the ruling race. The Mongolian lives mostly in eastern Asia; the Malay in Australia and the islands of the Pacific and Indian Oceans; the Ethiopian in Africa, and the copper-colored race in America.

In different parts of the globe, also, people live in very different ways. These ways of living are sometimes spoken of as **Savage**, **Half Civilized**, and **Civilized**.

In the *Savage* condition men do not read or write or live in houses. They have only the rudest huts, and sometimes not even so much as those. The African negroes and the American Indians are of this sort.

In the *Half Civilized* state mankind know little of such things as telegraphs, railroads, and steamboats, and have but few books. Many of them lead a wandering life with flocks of sheep and herds of cattle. This state of society prevails throughout most of Asia.

We find among *Civilized* people well built houses, railroads, steamboats, telegraphs, schools, colleges, and many books. Civilization prevails in the society of Europe and America and in the

¹ Reading Hour: *World at Large*, p. 74, Les. 32, The Ethiopian; p. 99, Les. 42, The Indian.

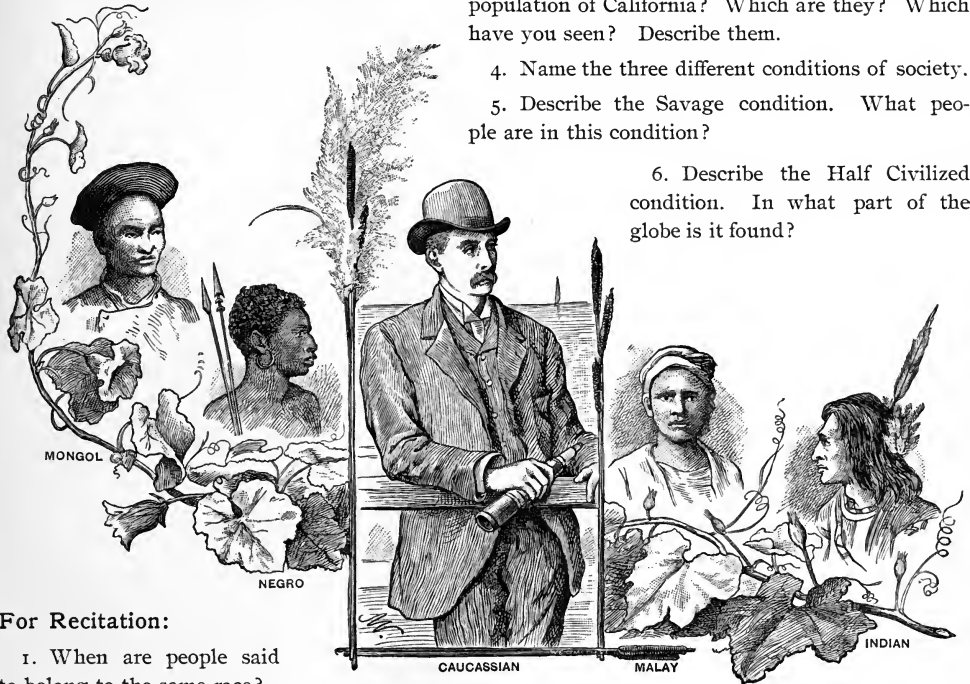
British possessions in Asia, and in other parts of the world where Europeans have settled.

3. In what part of the world does each chiefly belong? How many of these races make up the population of California? Which are they? Which have you seen? Describe them.

4. Name the three different conditions of society.

5. Describe the Savage condition. What people are in this condition?

6. Describe the Half Civilized condition. In what part of the globe is it found?



For Recitation:

1. When are people said to belong to the same race?

2. How many races are there and what are their names?

7. What are the marks of a Civilized state, and where does it exist?

GOVERNMENTS.

For Reading:

Most of the Governments of the world are either *Republics* or *Monarchies*.

The place where the chief officers reside and where the laws are made is called the *Capital*.

In republics the people choose the men who are

to govern them. The chief ruler is usually called a *President*.

In monarchies the chief ruler is not chosen by the people, but is the son or heir of a former ruler.

In some monarchies the laws are made by men

who are chosen by the people, and the monarch simply sees that they are obeyed.

In other monarchies, whatever the sovereign decrees is law. When this is the case the government is called a *Despotism*.

When the chief ruler of a monarchy is called a King or Queen, the country is called a *King-*

dom; when the chief ruler is called an Emperor the country is called an *Empire*.

The greatest progress in knowledge, invention, and comfortable ways of living is made in republics and in monarchies whose people have a large share in the government.

NORTH AMERICA.

QUESTIONS ON THE MAP.

[Questions in italics to be answered from the open map and not committed to memory.]

1. POSITION, FORM, AND EXTENT.—In what hemisphere is North America? In what part? *Start east from the Arctic Ocean, pass around North America and name all the waters that wash its shores. Name the waters that cut into the land. The peninsulas and capes that project into the water.* Is the coast line regular or irregular? What part of North America is widest? For how many miles does an inch on this map stand? *Measure the map from Cape Prince of Wales to the Isthmus of Panama. How far is it by your rule? For how many miles does that stand? Measure the map from the northern point of Queen Charlotte's Island to St. Johns, Newfoundland (new fānd land). How far is it by your rule? For how many miles does that stand? What, then, is the greatest length of North America? What is its greatest width?*

2. MOUNTAINS.—In what part of North America do you find mountain ranges? In what direction does the eastern range run? The western ranges? Which of the western ranges is farthest east? Which two lie nearest the Pacific coast? What range between these and the Rocky Mountains?

Write a short composition to tell what you have learned from the answers to questions in the last group.

3. SLOPES, RIVERS, LAKES.—How can you tell, on the map, which way the land slopes?

By following the rivers, we shall find all the land in North America included in four great land slopes: The Arctic Slope; The Atlantic Slope; The Gulf Slope; and The Pacific Slope. Within each of these great slopes we shall also find many smaller ones.

In which of these great slopes does each of the following rivers lie: The Mississippi; The Ohio; Missouri; Arkansas (ār'kan saw); Red.—Colorā'do; Columbia; Yu'kon.—Mackenzie; Nelson.—St. Lawrence.

Describe each of the above by the following

Model: The Mississippi River lies in the Southern, or Gulf, Slope of North America. It rises in the northern part of the United States and flows in a southerly direction to the Gulf of Mexico. Its eastern tributary is the Ohio, and its western tributaries are the Missouri, the Arkansas, and the Red Rivers.

Is it up hill or down from the eastern mountains to the Mississippi? From the Mississippi to the Rocky Mountains? In what direction does the land slope on each side of the Mississippi? Name and locate five large lakes connected with one another.

4. ZONES AND CLIMATE.—In how many zones does North America lie? In what zone is the greater part of North America? In what zone is the northern part? The central part? The southern part? What varieties of climate will you, therefore, find in North America?

5. COUNTRIES OF NORTH AMERICA.—Beginning at the north, name the four principal countries of North America. Bound the United States; British America; Mexico; Central America. Name the capital of each. The chief city.

Model: The United States is bounded on the north by British America, on the east by the Atlantic Ocean, on the south by the Gulf of Mexico and Mexico, on the west by the Pacific Ocean; capital, Washington; chief city, New York.

6. Give the location of the following islands: Greenland; Iceland; Newfoundland; Bermuda Islands; Bahā'ma Islands; Cuba; Hāy'ti; Porto Rī'co; Jamā'ica.

Model: Greenland is an island lying in the Atlantic Ocean northeast of North America. Iceland is east of Greenland.

To what group of islands do the last four named belong?

PRONUNCIATION.—Car ib bē'an.



DESCRIPTION OF ANIMALS SHOWN IN THE PICTURE.

For Reading Only:

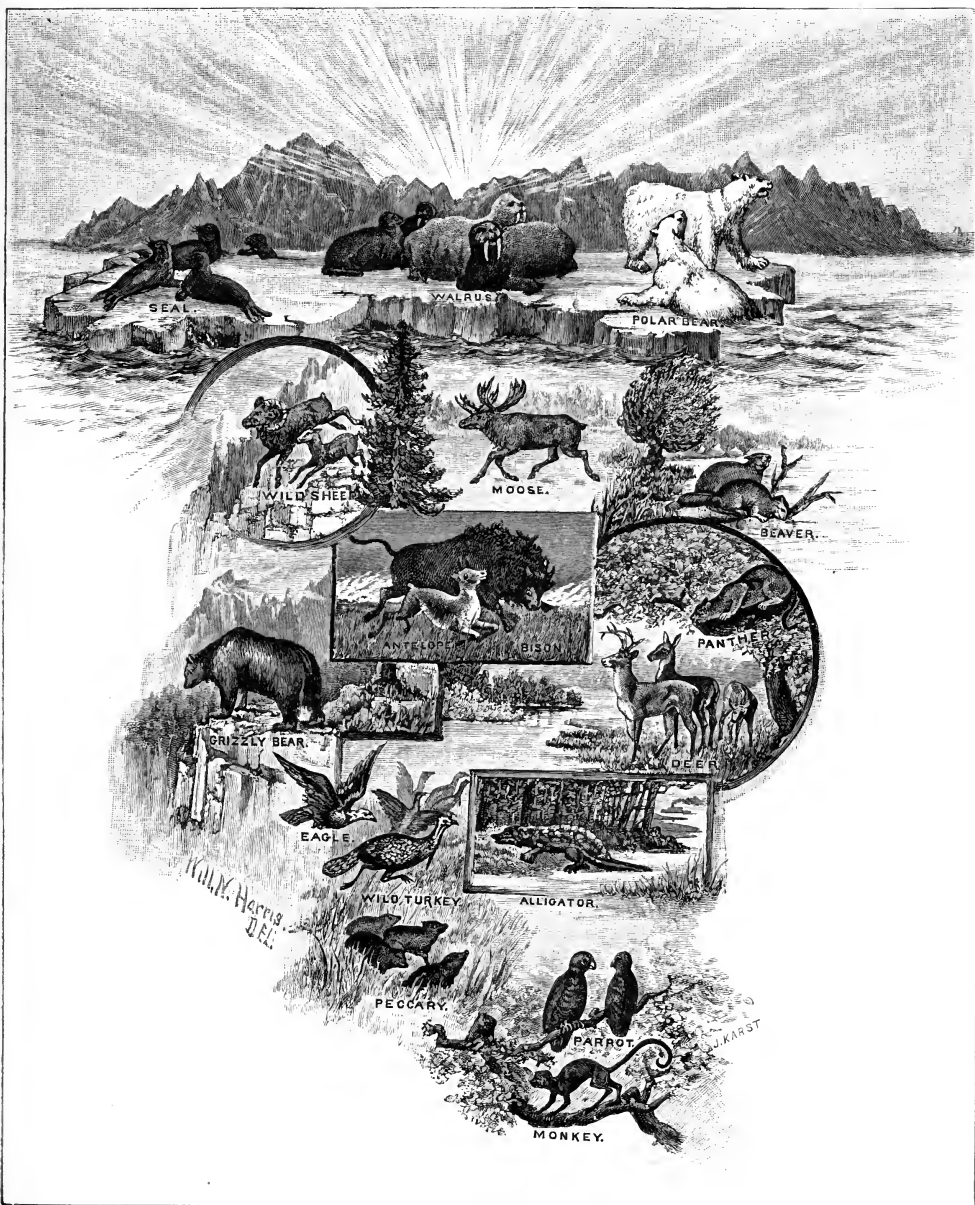
The Seal lives mostly in the water, though spending some months of each year on land. The organs by which it moves are neither legs nor fins, but resemble both, and its motions on land are very awkward and laughable. It is found chiefly in the polar regions and never in the tropics. The different kinds vary in length from five to twelve feet, and are large in proportion. Its fur is of the highest value. Seals are very intelligent animals with soft, beautiful eyes. Many amusing anecdotes are told of their behavior, when tamed.—The Walrus belongs to the same family as the seal, inhabiting only the polar regions. It is an enormously large animal, being from twelve to fifteen feet in length. Its tusks furnish a good ivory. It is valuable for its skin, teeth, and oil.—The Polar, or White, Bear is a powerful animal, living on fish and seals, which it captures, but is able to go a long time without food. It is a good swimmer, sometimes crossing a strait forty miles in width. It has been said to bury itself under the snow in winter, remaining during the entire season. This is true, however, only of the female. The male roams at large in winter as well as in summer.—The Grizzly Bear, which inhabits the Rocky and Sierra Nevada mountain region, is more dreaded than any other animal of North America. This bear is about eight feet long, eight feet around the body, and weighs about 800 pounds. Its strength is enormous, it runs swiftly, its claws are sharp, and its anger is terrible. Other wild animals live in such fear of this bear that even a hungry wolf will rapidly leave the locality marked by the print of the grizzly's feet.—The Rocky Mountain Sheep is about three and a half feet high at the shoulders and is found in troops of twenty or thirty inhabiting the region of the most inaccessible rocks, timid, and fleeing from the approach of man.—The Moose is the largest of the deer tribe, is seven feet high, with large, flat, branching horns. It does not reach its full size till about fourteen years of age.—The Beaver is an animal belonging to the tribe of gnawers, social in disposition, living in colonies, and building houses and dams out of trees, brush, and stones, stuck together with mud. It has been thought that the beaver plasters on the mud with its broad tail, as a mason plasters with a trowel, but this is denied by those who have observed the creature's operations. The beaver employs its teeth in felling and cutting up the trees used in its structures, which are built in the clear streams of British America and the northern part of the United States.—The Virginia Deer is a

beautiful and active creature whose flesh, called venison (vēn'izn), is much prized for food, and whose skin is used by the Indians for clothing. The horns of the male are large and branching, and grow and fall off every year. While in the early stages of growth, they are burning hot, owing to the fierce flow of the blood through them necessary to build up the bone so rapidly.—The Antelope is a graceful little animal with slender legs, a split hoof, and short tail, resembling the deer. It is found on the unsettled western prairies.—The Bison travels in herds on the treeless plains of the temperate zone, and is fast disappearing. Great numbers have been slaughtered for their hides only, and their bodies left to the wolves and birds. The flesh is of good quality for food.—The Panther is an animal of the cat tribe, and is found almost everywhere in the wild forests of the Temperate Zone. It is a fierce and cruel creature, quick of motion, with sharp teeth and claws, and is more than a match for almost any dog.—The Peccary, found in the warm climates of North America, is a kind of wild pig, weighing only fifty or sixty pounds. It has little intelligence, a fierce disposition, and no fear. A herd of these animals has been known to put to rout a party of hunters and dogs in the utmost confusion.—The Alligator belongs to the crocodile tribe of reptiles. It is found mostly in the rivers and lakes of the states bordering on the Gulf of Mexico, and is a powerful creature about ten feet in length. The alligator is a hard creature to kill. When pierced by bullets and stuck full of spears it still writhes and struggles, snapping its jaws and lashing its tail with great fury.—The Eagle of North America is a bird of lofty and fierce bearing, of keen sight, and swift wing—a bird dreaded by all the rest of the feathered tribe that inhabit the same locality. Though, on account of its courage and strength, it was selected as the emblem of our nation, yet Benjamin Franklin objected to the selection, because it is “a bird of bad moral character and does not get its living honestly.”—The Wild Turkey inhabits the forest regions of the central part of the United States, where it is much sought by hunters and valued as food. It bears a close resemblance to the domestic turkey.—The tame Parrot is well known. In its wild state the favorite food of the North American parrot is cockle-burs. It is affectionate in disposition and often manifests its tenderness in a touching manner.

Reading Hour: *Wood's Mammalia*, p. 509, The Seal; p. 513, The Walrus; p. 499, The Polar Bear; p. 400, The Grizzly Bear; p. 683, The Rocky Mountain Sheep; p. 688, The Moose; p. 566, The Beaver; p. 701, The Virginia Deer; p. 605, The Antelope; p. 630, The Bison; p. 163, The Panther; p. 751, The Peccary.

Wood's Reptiles, p. 31, The Alligator.
Wood's Birds, p. 46, The Eagle; p. 620, The Wild Turkey; p. 526, The Parrot.

What wild animals have you seen in your own neighborhood? Describe them.
Let each pupil take some animal of the picture, learn its habits, and, Friday afternoon, impart his information.



DESCRIPTION.

NATURAL DIVISIONS OF NORTH AMERICA.

[The Reading Hour: As the study of North America proceeds ask pupils to look in such books of those referred to for supplementary reading as may be at command, or any books, magazines, or newspapers that touch the matter in hand, and find some brief extract suitable to read in class.]

I. ATLANTIC SLOPE.

For Reading:

If you have studied the map questions well, you have learned the size of North America by measuring the map. You have noticed the chain of mountains on the east and the ranges on the west, and you have followed out the rivers to the sea in four directions—have you not?—east, north, south, and west.

Now, look again at the map and notice once more the Appalāchian (eastern) range of mountains. The country east of these, as you see by the short rivers, slopes rapidly down to the Atlantic Ocean, and this slope along the whole eastern side of North America is called the Atlantic Slope, or Atlantic Plain, and is the most thickly settled part of this Grand Division.

Many fine rivers flow down from the mountains through this plain. The largest cities of North America are built on these rivers and on the bays that cut into the land. Vessels pass up and down their channels, carrying the articles of an extensive trade.

Many smaller streams also run down from the hills of this slope and furnish water power to turn the machinery of factories to make cotton cloth, woolen cloth, shoes, paper, railroad cars, furniture, and almost everything that people use.

For Recitation:

I. 1. The land of North America east of the

Appalachian Mountains is called the Atlantic Slope. The Atlantic Slope is more thickly peopled than any other division of North America.

2. The largest cities of North America are built on the rivers of this slope and on the bays of the Atlantic coast.

3. Many small streams furnish water power for mills and factories.

NOTE.—In the sections, "For Recitation," a variety of method has been suggested. In some instances a brief statement of the leading points of the text has been made for the pupil to memorize. This has been done, mainly, to show him how to summarize for himself in answer to questions, and is confined chiefly to the earlier lessons of the book. In other cases questions are asked, and in others, still, the topic, merely, is suggested. The teacher can vary these methods as the ability of the class may suggest.

II. THE GREAT CENTRAL PLAIN.

For Reading:

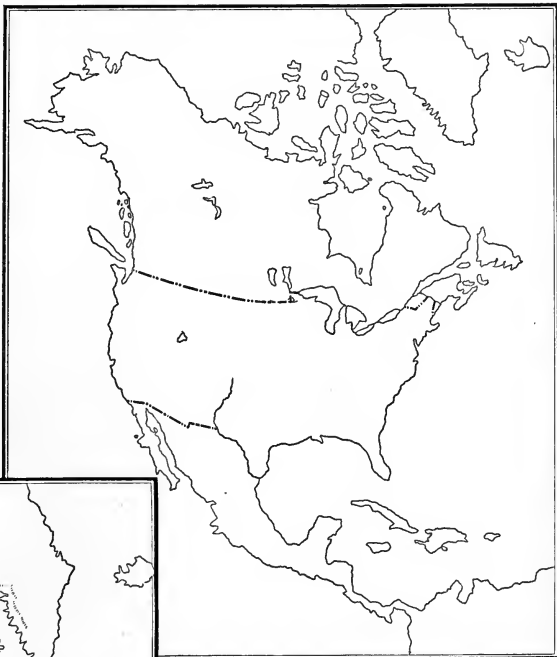
Now let us look once more at the map and imagine ourselves to be upon the top of the Appalachian Mountains. If we turn toward the west we shall be looking down upon the most important region of this Grand Division. It is called the Great Central Plain of North America, and extends westward from the Appalachian Mountains to the Rocky Mountains, and north and south from the Arctic Ocean to the Gulf of Mexico.

In this Great Central Plain, about half way from the Arctic Ocean to the Gulf, lies a strip of high land that crosses it from east to west, and which is called the Height of Land.

This strip divides the Great Central Plain into two parts, so that all the large rivers on the south of the strip, except the St. Lawrence, which breaks out eastward from the Great Plain to the Atlantic Ocean, flow south toward the Gulf of Mexico, and all on the north flow toward the Arctic Ocean. These two parts of the Great Central Plain are

two of the four great slopes of North America. Five of the largest and most important lakes in the world lie on the southern side of this Height of Land. They are connected with one another by narrow straits and short rivers, like links, and are, therefore, often called "the chain of Great Lakes."

Lake Superior is the farthest west, and is the highest of these lakes, which flow down, one into another, until they reach Lake Ontario, whose waters flow through the St. Lawrence River to the sea. The waters of Lake Erie, when flowing through Niagara River into Lake Ontario, fall over a great precipice,

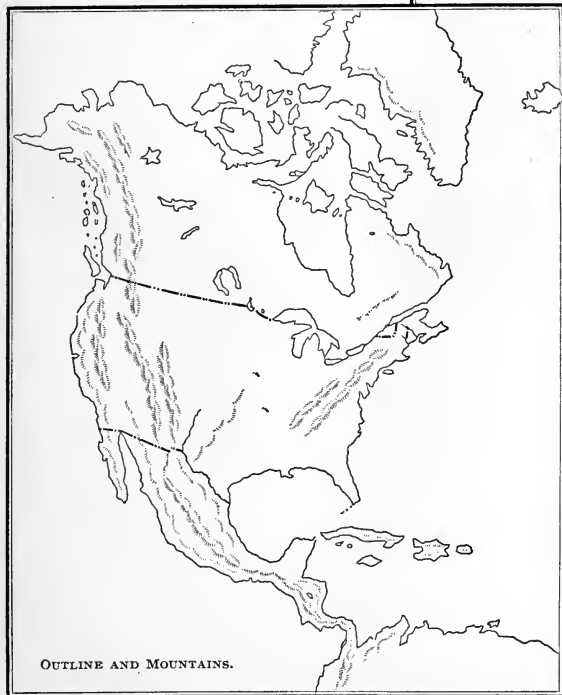


OUTLINE OF NORTH AMERICA.

160 feet down, making the famous Falls of Niagara. The roar of the falling water is sometimes heard for fifty miles, and a cloud of vapor rises constantly from the foot of the falls.

Nearly all of the Great Central Plain

PROGRESSIVE MAP DRAWING.—Four drawings of North America by Charles Boehme, a pupil in the fifth year of the schools of Sacramento, are given to illustrate a valuable means of impressing the essential facts relating to a country upon the mind of the pupil. These maps are drawn from inspection—no measurements being taken. The series should be carried to a fifth map, adding the leading cities. The child who does it clumsily is helped as much as the more skillful. A similar progressive series should be drawn of all maps given in the book.



OUTLINE AND MOUNTAINS.

lying south of the Height of Land is in the Gulf Slope, and consists mainly of the Mississippi Valley.

It is the largest fertile tract of land in North America. If you look at the map and notice its great extent, and what part of the Temperate Zone it is in, and the great number of rivers that run through it, you would guess this without being told.

The part of the Great Central Plain that lies north of the Height of Land is called the Arctic Slope.

It is well watered, as you will see by the map, and that part of the slope lying near the Great Lakes is fertile. Farther north, however, though the rivers are abundant, but little can be raised, and therefore the inhabitants are few. Look at the map and give the reason for this.

For Recitation:

II. 1. The region of country between the Appalachian Mountains and the Rocky Mountains, all the way from the Arctic Ocean to the Gulf of Mexico, is called the Great Central Plain of North America.

2. The Height of Land is a strip of country, slightly elevated, which crosses the Great Central Plain from east to west, about half way from the Arctic Ocean to the Gulf of Mexico.

3. Most of the country south of this strip slopes toward the Gulf of Mexico, and that on the north toward the Arctic Ocean.

4. Five of the largest lakes in the world lie on the southern side of this Height of Land.

5. The waters of these lakes flow eastward through the St. Lawrence River to the ocean.

6. Nearly all of the Great Central Plain lying south of the Height of Land is in the Gulf Slope.

7. The Gulf Slope is the largest fertile tract of land in North America.

8. The part of the Great Central Plain lying north of the Height of Land is called the Arctic Slope.

9. The southern part of the Arctic Slope is fertile, the northern part unproductive.

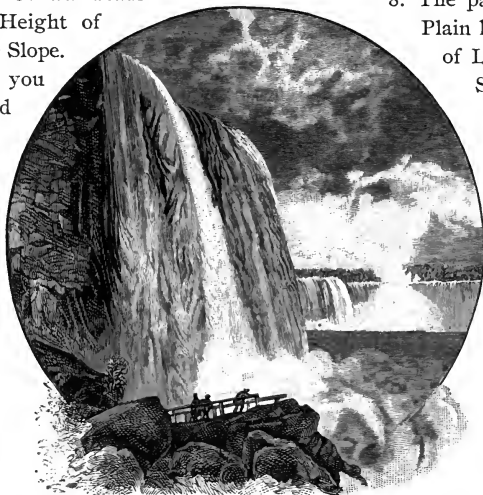
III. PLATEAU REGION AND PACIFIC SLOPE.

For Reading:

As we go westward from the Missouri River, across the Great Central Plain, we begin slowly to ascend the eastern side of the

Rocky Mountains. The ascent is so gradual that travelers are often surprised to be told that they are on the top of the mountains, when they seem all the time to have been crossing a plain.

Between the Rocky Mountains and the Si er'a Nevá'da Range, a region of high land, sometimes called the Great Plateau Region, stretches on to the west for nearly 1,000 miles. Here and there in this region some mountain streams ripple through narrow valleys that can be cultivated, but the general surface is rugged and rocky, some of its peaks rising nearly three miles above the level of the sea.



In the Rocky Mountain system are found some of the greatest of those wonderful cuts through mountains, called cañons (kăn'yón). These cañons seem like great chasms, or splits, in the earth, but in reality they are deep channels, worn by streams of water flowing for thousands and thousands of years.

The most remarkable of these channels is the cañon of the Colorado River,¹ whose sides, or walls, rise, in some places, straight up nearly a mile and a half. If you can think of some place a mile and a half away, and then imagine that place to be lifted up overhead, keeping all the time at the same distance, you would get a good notion of the depth of one of these cañons.

This Plateau Region, though rough, is full of interest, and the journey across it brings us at last to the Pacific Slope. Here verdure and beauty spring up again, and rich valleys, bearing nearly all kinds of grains and fruits, spread out before us.

For Recitation:

III. 1. Describe the ascent of the Rocky Mountains from the eastern side.

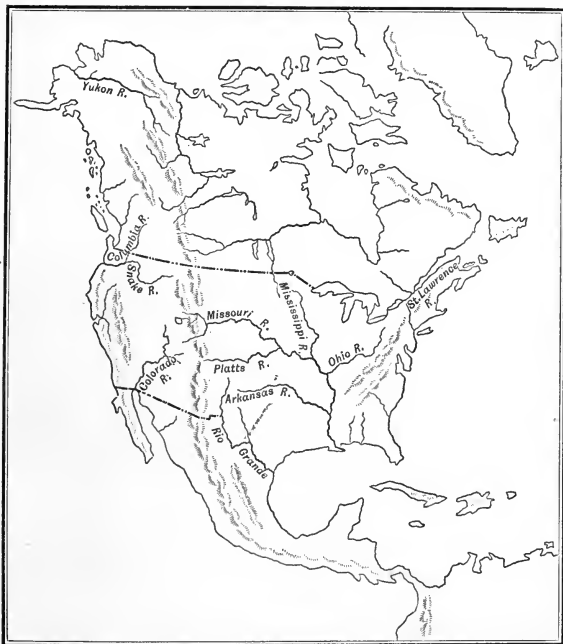
2. That part of North America lying between the Rocky Mountains and the Sierra Nevada Range is a highland, called the Great Plateau Region, and is nearly 1,000 miles wide. What about streams and valleys in the Plateau Region?

3. Many great cañons are found in the Plateau Region. A cañon is a deep channel worn in the earth by a stream of water flowing for thousands of years.

4. Write a description of the Colorado Cañon.

5. The country west of the Plateau Region is

¹ Reading Hour: King's *Methods and Aids in Geography*, pp. 281, 282, Cañons of the Colorado.



OUTLINE, MOUNTAINS, AND DRAINAGE.

called the Pacific Slope, and is a rich and fertile region, producing a great variety of grains and fruits.

PEOPLE, PRODUCTIONS, ISLANDS.

I. ORIGINAL INHABITANTS.

For Reading:

But few of the inhabitants now remain who occupied North America when the whites first came. The Esquimaux¹ (ěs'ke mōz) still dwell along the northeastern and northern shores in their round topped huts, and subsist by hunting and fishing. They are clothed with seal skins in winter and reindeer² skins in summer.

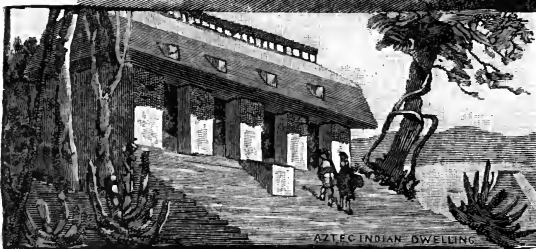
¹ Reading Hour: *World by the Fireside*, p. 27, Esquimaux Houses. *Seven Little Sisters*, p. 9, The Esquimaux Sister.

Scribner's *Geographical Reader and Primer*, pp. 79-82.

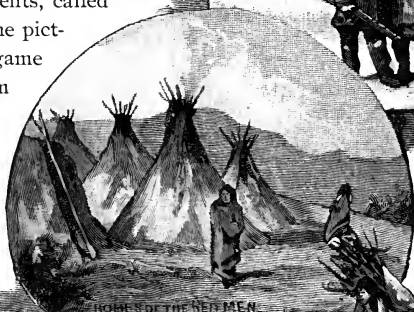
² *Easy Steps for Little Feet*, p. 12, The Reindeer.

A few of the Red mēn, or Indians,¹ yet remain in the western part of the Central Plain and in the Rocky Mountain region. When the whites came the Indians occupied all of North America except the southern part and the country of the Esquimaux. Huts of bark, or tents, called wigwams, like those you see in the picture, formed their dwellings; and game taken in the hunt, with fish from the rivers, were their food.

The **Zuni** (zū'nī) and the **Aztec** (az'tec) people formerly occupied the country south of these. A few hundred Zunis (niz) may still be found in Arizona and New Mexico, but the Aztecs have disappeared. The picture shows the sort of dwellings they occupied. In many places some portions of the ruins yet stand.



AZTEC INDIAN DWELLING



HOMES OF THE RED MEN



ESQUIMAUX VILLAGE

II. EUROPEAN (ēū rōp-ē'an) SETTLERS.

For Reading:

The first settlers in the Dominion of Canada, nearly 300 years ago, were from France, and their descendants, who occupy the eastern part of the country, still speak the French language. A little more than 100 years afterward England conquered Canada, and Englishmen settled the central and western portion of the territory, where the English language is now spoken.

In the United States the inhabitants are mostly of

English descent, the English having been most active in the early settlement of the country. People of many nations, however, are now settled in all parts of the country, but the English language is the prevailing speech.

In Mexico the Aztec tribes were conquered by the Spaniards more than 300 years ago, and,

¹ *World by the Fireside*, p. 56, *Stories of the Medicine Bag*.

although Mexico has long been an independent country, the people are mostly descendants of Spaniards, and still speak the Spanish language.

For Recitation:

I. What three classes of people occupied North America when the whites came? Tell about

1. *Esquimaux* (a) where, (b) dwellings, (c) subsistence, (d) clothing.

2. *Indians* (a) former territory, (b) present location, (c) dwellings, (d) subsistence.

3. *Zunis* and *Aztecs* (a) former location, (b) what about them now.

II. 1. *Canada*—Time of settlement; first settlers; conquerors; languages spoken; in what parts.

2. *United States*—Descent of most of the people; other settlers; prevailing language.

3. *Mexico*—Original tribes; conquerors; time of conquest; present inhabitants; language.

III. PRODUCTS—MINERAL, VEGETABLE, ANIMAL.

For Reading:

Nearly all the products of the globe are found in the Grand Division of North America.

The mountain regions are rich in **Minerals**. In the eastern range men have found immense beds of iron ore, and, near by, mines of coal, which is needed to melt the ore. Here, too, are found the most productive wells of a mineral oil called *petroleum*, though both coal and oil occur



OUTLINE, MOUNTAINS, DRAINAGE, PRODUCTS.

in various places all the way from the Atlantic to the Pacific Ocean.

Beds of copper and lead are found near the central part of the Height of Land.

In the western ranges have been found great quantities of gold and silver. Quicksilver is needed to separate the gold from the dross, and to provide for this necessity Nature has placed near the gold mines beds of quicksilver, just as, in the eastern range, coal was supplied to separate the iron from the ore.

Great forests occupy the highlands of a wide belt of country through the central part of North

America from east to west, and afford abundant supplies of lumber both for building and furnishing. The principal varieties are pine,¹ fir, redwood, ash, cherry, oak, chestnut, and maple.

In the central part of the Gulf Slope are great forests of walnut. Forests of cedar and cypress abound in the low plains and swamps of the Atlantic Slope toward the south, and rosewood and mahogany in the southwest and extreme south.

The Atlantic Slope, the Central Plain, and the Pacific Slope, in the middle and northern parts, yield the products of a temperate climate—corn, wheat, oats, rye, potatoes,² tobacco,³ apples, peaches, plums, cherries, grapes, though in the far north only the hardiest of these are found. In the south a tropical climate produces cotton, sugar, oranges, pineapples, and ba nã'nas.

The **Animals** of all zones are found in North America. The fur bearers, such as the seal, white bear, and beaver, are found in the north; those best suited for food, as the bison, deer, elk, and turkey, are found in the central or temperate belt, also the grizzly bear, the Rocky Mountain sheep, the wolf, and the fox; while in the tropical regions we see the monkey, the parrot, the alligator, and the pec'cary.

For Recitation:

III. 1. Describe any mines that you have seen. Where in North America are the chief supplies of iron and coal? Of petroleum? Of copper and lead? Of gold and silver? Of quicksilver? Name and write three uses of iron. Of coal. Of petroleum. Two uses of gold. Three of silver. Three of quicksilver. Two of copper.

¹Let each pupil take one of these woods and learn all he can about it—where it grows, its peculiarities, what it is used for, etc. He may get his knowledge from any source and impart it to the class Friday afternoon.

²Reading Hour: *World by the Fireside*, p. 74, Story of the Potato Plant.

³*World by the Fireside*, p. 73, Story of the Tobacco Plant.

2. Which of the trees named are chiefly used in building? Which to make furniture? Opposite the name of each kind of wood write a list of the things you have seen made of it.

3. Where is walnut chiefly found? Cedar and cypress? Rosewood and mahogany?

4. Write, in a column, all the products mentioned of the farm and orchard, and opposite each one write all the articles of food, clothing, medicine, or drink, made from that product.

Model:

Product.	Food.	Clothing.	Medicine.	Drink.
Corn.	Bread. Mush. Cakes.			Whisky.

5. **Animals** (a) *fur bearers*—what, where, (b) *food animals*—what, where, (c) what other animals. (d) tropical animals.

IV. ISLANDS OF NORTH AMERICA.

Some of the islands of North America belong to European nations, and some have independent governments.

Greenland¹ and **Iceland** belong to Denmark, a country of Europe. Greenland is about one fourth as large as the United States, but nothing can grow more than twenty miles back from the shore. Beyond that all is ice and snow.² Most of the people are Esquimaux. Along the western coast, however, are a few European trading posts.

Iceland,³ though milder in climate than Green-

¹Reading Hour: *Iceland, Greenland, and the Faroe Islands*, p. 306, traits of character and food; p. 307, houses; p. 308, dress; pp. 309, 310, occupation; p. 312, burial.

World by the Fireside, p. 27, The Greenlander.

²Reading Hour: *Scribner's Geographical Reader and Primer*, pp. 76,

77, 78, Arctic Days.

³Reading Hour: *Iceland, Greenland, and the Faroe Islands*, p. 196, education; p. 197, winter occupation; p. 204, food; p. 206, houses; p. 54, geyser; p. 67, day and night.

World by the Fireside, p. 46, Icelanders' Ways.

land, is yet a cold and barren country. Volcanoes are numerous. Springs of boiling water, called Geysers (*gē'zer*), spout from the earth. Hardy ponies, cattle, and sheep live on the wild grass that grows in the valleys. The people are industrious, intelligent, and hospitable in character, though uncleanly in their habits.

Newfoundland belongs to Great Britain, though not to the Dominion of Canada, and has an English population, mostly engaged in fishing.

The most important group of islands is the West Indies, lying between North and South America. In passing to them from Greenland and Iceland we go from the barrenness of the Frigid Zone to the rich vegetation of the tropics. In these islands we travel through plantations of coffee, cotton, sugar, pineapples, oranges, bananas, tobacco, and spices. We see forests of mahogany, rosewood, and palm, and meet an indolent people, made up of Spaniards and their descendants, and negroes. Cuba and Porto Rico belong to Spain, Hayti is independent, and Jamaica is under the government of Great Britain. Havana, in Cuba, is the chief seaport.

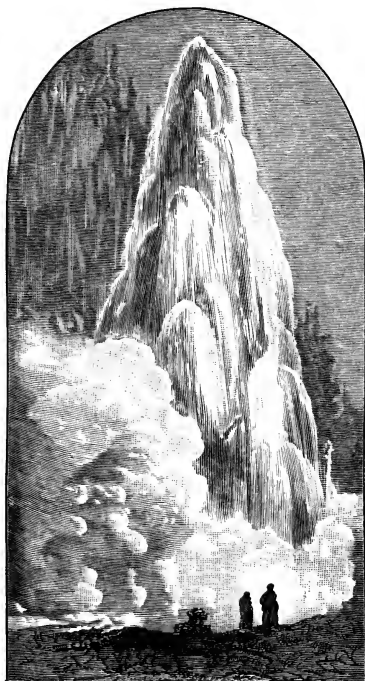
For Recitation:

IV. 1. *Greenland*—Belongs to what nation; size; extent of cultivation; Esquimaux; Europeans.

2. *Iceland*—Climate; fertility; volcanoes; geysers; domestic animals; people.

3. What of *Newfoundland*?

4. *West Indies*—Locality as to zone; productions; forests; people. Why are the people indolent?



A GEYSER.

Drainage:
(Slopes and Rivers.)

Climate.

People.

Productions:
(Mineral, Vegetable, Animal.)

Countries.

Islands.

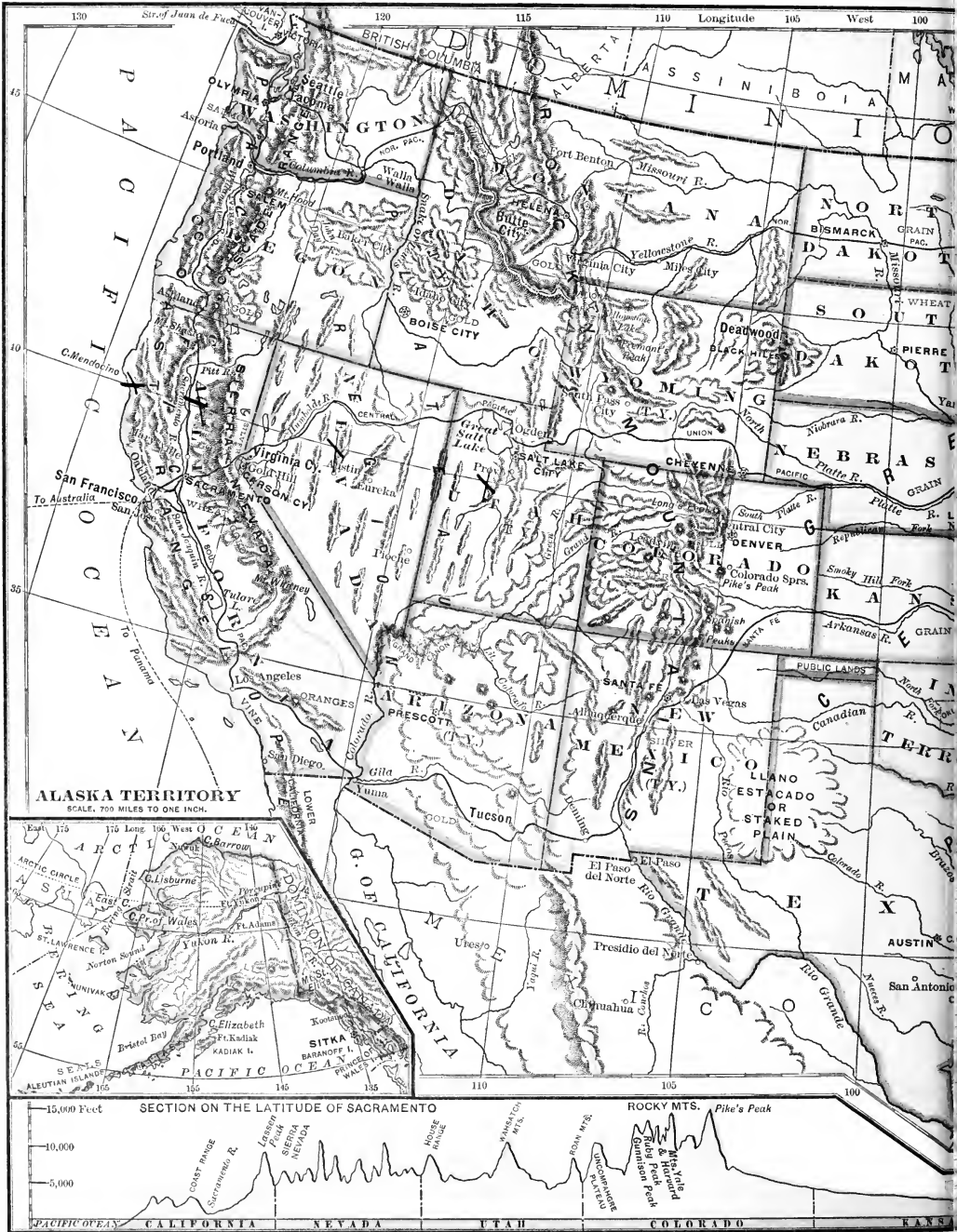
Cities and Towns:
(Location, for what noted, etc.)

TOPICAL REVIEW OF NORTH AMERICA.

Write, in your own language, all of the geography of North America that you know, using, as a guide, the following topics:

Position.	Coast Line.
Extent.	Mountains.

NOTE.—This exercise in review gives the pupil an opportunity to tell, in orderly form, *what he knows* of the subject. One test of this kind in connection with each of the Grand Divisions should be made. A collection of questions to be answered often reveals less of what a pupil knows than of what he does not know. Should the pupil at first need assistance in bringing his faculties to bear upon this kind of work, questions can be asked that will aid him. If what he writes in these reviews is copied in a blank book, he will have, at the end of the course, a very complete little Geography of his own composition.







PACIFIC SLOPE.

SIERRA.

PLATEAU REGION.

ROCKY MOUNTAINS.

THE UNITED STATES.

QUESTIONS ON THE MAP.

[Questions in italics to be answered from the open map, and not to be committed to memory.]

1. POSITION, EXTENT, NATURAL DIVISIONS.—In what part of North America is the United States? *Measure the distance from the mouth of the Columbia to the extreme eastern point of Maine? What is the distance on the map? How many miles is that? Measure the distance from the extreme southern point of Texas to the northern boundary of Dakota. What is the distance on the map? How many miles?* What, then, is the extent of the United States from east to west, exclusive of Alaska? From north to south? In the same way find the distance from San Francisco to New Orleans; to Chicago; to New York. What is that part of the country that lies east of the Appalachian Mountains called? That lies between the Appalachian and the Rocky Mountains? What is that part of the country called between the Rocky and Sierra Mountains? What is that part of the country called west of the Sierras?

2. SLOPES AND MOUNTAINS.—How many of the four great slopes of North America are found also in the United States? Which are they? What mountain ranges of North America are found also in the United States? What slope of the United States lies east of the Appalachian Mountains? What great divisions of the United States are separated by the Appalachian Mountains? In which of the four great slopes is the larger part of the Great Central Plain of the United States? What mountains bound the Gulf Slope on the west?

3. SLOPES AND RIVERS.—What do the rivers that flow into the Atlantic Ocean form? [*Ans. The Atlantic River System.*] *Name seven rivers of this system. Which of these form the boundary lines of states? Describe each.* [See Model, page 34.] What slope is drained by the Atlantic River System? What do the Mississippi and its tributaries form? [*Ans. The Mississippi River System.*] *Name three eastern and three western tributaries of the Mississippi. Which of these form the boundaries of*

states? Describe each. What name is given to the region of country drained by the Mississippi River System? [*Ans. The Mississippi Valley.*] In which of the four great slopes of North America does the Mississippi Valley lie? What river forms part of the southwest boundary of the United States? *Beginning with the Yukon, name five rivers of the Pacific Slope. Describe each.*

4. LAKES.—What chain of lakes in the northern part of the United States? Which of these lie between the United States and Canada? Which one lies wholly within the United States? What river takes the water of these lakes to the ocean? What lake in Utah? For what are most of the lakes of the Great Plateau Region noted? [*Ans. They have no outlet.*] What becomes of the water that runs into these lakes?

5. PENINSULAS AND ISLANDS.—What peninsula projects from Alaska? What natural division of land forms the southeastern part of the United States? Between what two bodies of water is it? What chain of islands southwest of Alaska? Southeast of the United States?

6. CLIMATE.—In what zone is the United States? *Which are the warm states? How do you tell? Which states and territories are coldest? Which states are neither very hot nor very cold?* In which of these three groups is California?

7. LOCATION OF STATES.—Rule three columns on slates or paper. Write in the first column the names of fourteen states that touch the Atlantic Ocean; in the second, their capitals; in the third, the largest town of each.

Model:

State.	Capital.	Largest Town.
Maine.	Augusta.	Portland.

In the same way, write the names of five states that touch the Gulf of Mexico. Eight states touching the



GREAT CENTRAL PLAIN.

ATLANTIC SLOPE.

Great Lakes. Five states on the west bank of the Mississippi. Five on the east bank. Three on the north bank of the Ohio. Two on the south bank. Six states touched by the Missouri River. Between which of these states does the Missouri form part of the boundary line? Which states does it cross? In which of the four great natural divisions of the United States do the last seven groups of states lie? Write the states and territories crossed by the Rocky Mountains. Three states and territories that touch the Pacific Ocean. *What states are best situated for lake commerce? What for river commerce? Through what states would you travel in a straight line to reach New York? New Orleans?*

8. LOCATION OF CITIES.—The following are the chief commercial cities of the Atlantic Slope; name the location of each: Portland, Boston, New York, Philadelphia, Baltimore, Charleston.

The following are the chief commercial cities of the Great Central Plain: Minneapolis, St. Paul, St. Louis (saint loo'y), New Or'le ans, Pittsburgh, Cincinnati, Lou-

isville, O'ma ha, Kansas City, De troit', Chicago, Milwaukee. Locate and write the names of those situated on the Mississippi; on the Ohio; on the Missouri; on the Great Lakes.

Locate the following cities of the Pacific Coast: Seat'tle, Portland, San Francisco, Lōs An'ge les.

9. THOUGHT QUESTIONS.—Would you think the rivers in the northern part of the Atlantic Slope swift or slow? Why? What would you think about these rivers for water power? Would you think the rivers of the Mississippi Valley swift or slow? Why? Would you think the slope of the Mississippi Valley toward the Gulf of Mexico steep or gradual? Why? Notice the part of the Temperate Zone in which this valley lies, and the number of rivers in it, and tell whether you think it a fertile or an unproductive country. If fertile, what would you judge the occupation of the people to be?

PRONUNCIATIONS.—Aleutian (a lū' she an); Baton Rouge (bāt'un-roozh); Boi'se (boy'ze); Cheyenne (shē'nē); Concord (konk'urd); Des Moines (de moīn'); Gal'veston; Hēle'na; Illinois (il li noi'); Mich'igan; Mon tā'nā; Mont pē'l'ier; Raleigh (raw'ly); San'ta Fe (fā); Tāh'le quāh; Tucson (tu sōn'); Wy o'ming.

DESCRIPTION.

HISTORY.¹

For Reading:

You need not be told that the country you are now to study is our own and is a Republic.

The settlement of our country began on the Atlantic coast. There, nearly 300 years ago, people from different countries in Europe began to make settlements.

Spaniards settled in Florida, but their settlements did not flourish.

Englishmen settled along the coast from Virginia northward to Boston, wherever there were good harbors.

The Dutch settled in New York, but the English took it from them.

Although these settlers had a hard time for many years, with the cold winters and the savage Indians, the settlements grew in number until, in a little more than 150 years, they reached up into the Appalachian Mountains.

All this time the settlers north of Florida were under the government of Great Britain, but they now joined in a struggle for freedom, and after a long, hard war with England they compelled her to let them go. They then formed for themselves the Government of the United States.

After this they began to go over the Appalachian Mountains into the Mississippi Valley. The

¹ Reading Hour: *Our World Reader*, p. 181, How America was found.

United States bought Florida from Spain, and, from France all of her country west of the Mississippi. Thousands of people from Europe came to settle in the United States. Railroads began to be built to carry them westward, and so the country kept filling with people until, in less than 100 years, they had spread out to the Pacific Ocean, over new country obtained from Mexico. By and by more will be told about the settlement of California.

For Recitation:

1. The country of the United States was first settled on the Atlantic Slope nearly 300 years ago.
2. The Spaniards settled in Florida.
3. Englishmen settled along the northern part of the coast.
4. The Dutch were the first settlers of New York.
5. The settlers north of Florida remained under the government of Great Britain for a little more than 150 years, when, after a long war with England, they established a government of their own.

6. After the new government was established, many thousands of people, from all parts of Europe, came here, and in less than 100 years settlements and railroads had reached through the country to the Pacific Ocean.

THE ATLANTIC SLOPE.

I. NATURAL FEATURES.

For Reading:

Look at the map and you will notice, by the direction of the rivers, that most of the land of the Atlantic states slopes to the southeast.

You will notice, also, that in the northern part of this division the mountains come nearer to the

seacoast than in the southern part, making the surface of the country more broken. For this reason the rivers of this part are more rapid than those farther south.

The coast line of these northerly states is very much broken, making a large number of excellent harbors.

The coast along the southern half of this great slope, and for many miles inland, is low, sandy, and marshy. There are, therefore, fewer good harbors in the southern than in the northern half. Long, narrow, sandy islands line this part of the coast also, and prevent easy access to its harbors.

If we ascend the rivers we shall find most of them flowing slowly through a wide, level country with a rich soil.

In a region extending so far north and south there must be a great variety of climate. Long, cold winters and short, hot summers are found in the north, while there is almost no winter in the south. It is warm there during the whole year.

When we think of the differences in surface, coast lines, rivers, and climate, we may judge that there are also great differences in products and occupations. And this we shall find is true.

For Recitation:

- I. 1. In what direction does the land of the Atlantic states slope? How do you tell?
2. Compare the surface of the states north and south. What difference in the character of the rivers?
3. Coast line and harbors in the north.
4. Coast lands and harbors in the south. Islands.
5. Soil and surface in the south.
6. Compare the climate north and south.
7. Differences in surface, coast lines, rivers, and climate make different occupations.

II. MANUFACTURING—LUMBERING—FISHING —QUARRYING—MINING, IN THE NORTH.

For Reading:

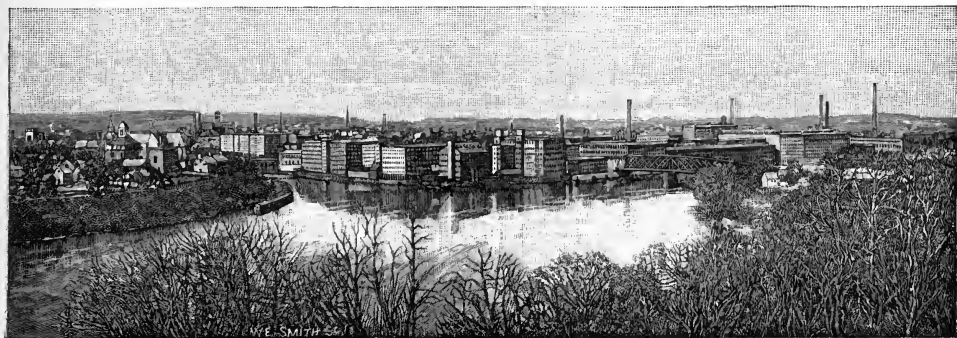
Wherever mountains are near the coast the rivers that rise in them are short and rapid. Such rivers furnish water power to drive machinery, hence manufacturing is usually one of the principal occupations of the people. Nearly all the rivers in the northern part of this slope are of this kind, especially those in the six states east of New York, which are sometimes called the New England States.

are employed in the great pine woods of Maine and New Hampshire, and along the Appalachian Mountains, in getting out lumber.

Thousands more are catching cod, mackerel, and herring off the coast of Maine and Massachusetts. The fisheries off these coasts yield many thousand tons a year.

The marble and granite quarries of Vermont and New Hampshire also give employment for many people.

The vast mines of coal and iron in the eastern side of the Alleghany Mountains, in Pennsylvania,



"THE CITY OF SPINDLES."

• One river in New Hampshire and Massachusetts—the Merrimac—is said to move more spindles than any other river in the world. Lowell, the largest city situated on this river, is sometimes called "The City of Spindles."

Some of the most important articles manufactured in the states north of the Chesapeake Bay are cotton, linen, and woolen goods, boots and shoes, firearms, locomotives, steamers, farming tools, silverware, watches, jewelry, clocks, furniture, pianos, all kinds of hardware, sewing machines, and paper.

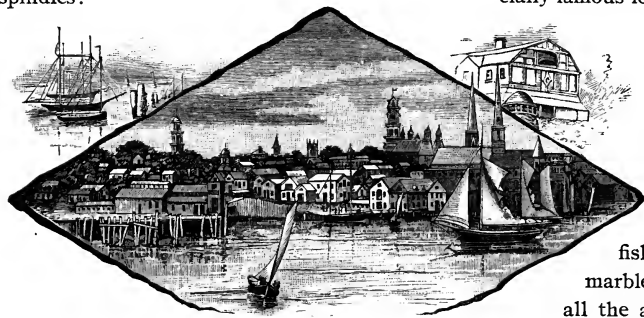
While so large a number of the people of this region are engaged in manufacturing, thousands

keep a large population busy, and yield nearly all the hard coal (anthracite) and almost half the iron used in the country. Here, too, is found nearly all the petroleum, or coal oil, of commerce, and natural gas wells are frequent. Zinc is found in New Jersey.

For Recitation:

II. 1. The rivers in the northern part of the Atlantic Slope, and especially in New England, are short and rapid, and furnish water power for extensive manufacturing. Name the New England States.

2. The Merrimac River, in New England, furnishes more water power than any other river in the world. How can a river be said to move spindles?



GLOUCESTER—A FISHING PORT OF MASSACHUSETTS.

Copy the following and fill the blanks:

The largest city on the — River is —, and it is sometimes called “—.”

3. Copy the list of manufactured articles and commit it to memory.

4. Lumber—where produced.
5. Cod, mackerel, and herring fisheries off the coast of Maine and Massachusetts are important.
6. Marble and granite quarries are extensive in Vermont and New Hampshire.
7. Large quantities of coal, iron, and petroleum are found in Pennsylvania, on the eastern side of the mountains. Zinc is found in New Jersey.

III. FARMING AND COMMERCE IN THE NORTH.

For Reading:

We have found so many people engaged in the factories, forests, fisheries, quarries, and mines of the northern states of the Atlantic Slope that you

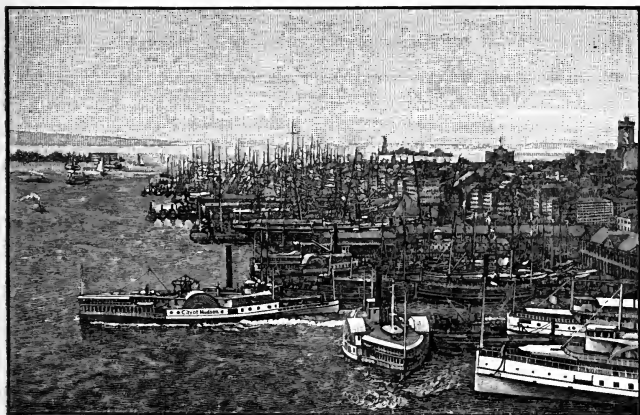
will, perhaps,* be surprised to learn that more people are engaged in farming than in any of the other employments—New England being especially famous for sheep and cattle; New York for butter, cheese, and horses; New Jersey and Delaware for garden vegetables, berries, and orchard fruits; and Pennsylvania for the varied farm products of its rich valleys.

What becomes of all that is made in the factories, all the fish caught from the sea, all the marble and granite cut from the quarries, all the anthracite and iron dug from the mines, all the coal oil taken from the oil wells? Are they all used by the people of these states north of the Chesapeake Bay? No. ‘Very great quantities of all these things, and some things produced on the farms, are sold to foreign countries and to other states of our own country.

In exchange the people receive articles which they need, and which they do not make or raise, such as tea, coffee, sugar, molasses, spices, fruits, silks, wool, leather, tin, india rubber, and medicines. This work of exchange gives another occupation for a large number of the people—the occupation of commerce.

We may now begin to appreciate the fine harbors along the northeastern coast of the United States, which furnish a safe place for thousands of ships to lie at anchor while loading goods for export and unloading goods which they have brought from other countries.

The largest and most important cities of the country—Boston, New York, Brooklyn, and Philadelphia—are built around these harbors. The Delaware River makes a harbor for the city of



NEW YORK SHIPPING.

Philadelphia. New York is the largest city in the United States, and is the great center of trade with foreign countries and between the states of our own country.

Its trade with the states of our own country is carried on by means of canals, rivers, the Great Lakes, and almost countless railroads that extend over the Appalachian Mountains and run in all directions through the Great Central Plain and across the Plateau Region to the Pacific Slope.

You will find it well to remember that the largest cities of the world, and the most thickly settled countries, are found wherever there are the best advantages for commerce and manufactures.

For Recitation:

III. 1. Name the farm products for which New England is chiefly noted. New York. Delaware and New Jersey. Pennsylvania.

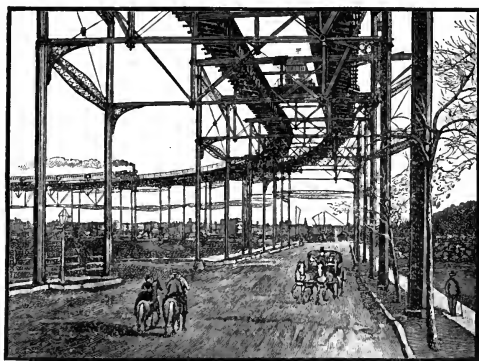
2. Exports from states north of the Chesapeake Bay. 3. Imports.

4. The harbors along the coast of this section give it great advantages for commerce, which is one of the chief occupations of the people.

5. The great cities of the country are built around these harbors. New York is the largest city in the United States and is the most important commercial city.

6. How is the commerce between New York and the interior states carried on?

7. Where are the largest cities and the greatest population of a country found?



ELEVATED RAILWAY, NEW YORK.

IV. OCCUPATIONS AND PRODUCTIONS IN THE SOUTH.

For Reading:

South of the Chesapeake Bay, on the east side of the Appalachian Mountains, some mines of coal and iron are found, but the surface of the

country, the soil, and the climate, nearer to the coast, are so different from those of the states further north that the people follow very different occupations. Most of the country is laid out in large plantations, where tobacco, corn, rice, and cotton are raised. Manufactures are, however, rapidly increasing.

ida, but especially in North Carolina, are immense forests of pitch pine trees, from which are obtained turpentine, tar, pitch, and resin. These are called naval stores, because so much used in and about ships. Turpentine is the sap of the tree; resin is made from turpentine, and pitch is made by boiling down the tar, which has been obtained by

burning the gummy pine trees in a close fire.

Other kinds of valuable trees grow in these southern forests, such as cedar, cypress, and juniper, from which shingles and staves are made; and live oak and white oak, much used in building ships. The wood of the red cedar trees of the Florida swamps is the best wood known for making lead pencils.

Florida is chiefly noted for its orange groves and as a resort for invalids on account of its favorable climate. Sponge fishing and the manufacture of cigars is carried on at Key West, the most southerly town of the United States, situated on one of the little islands lying to the southwest of the mainland of Florida.

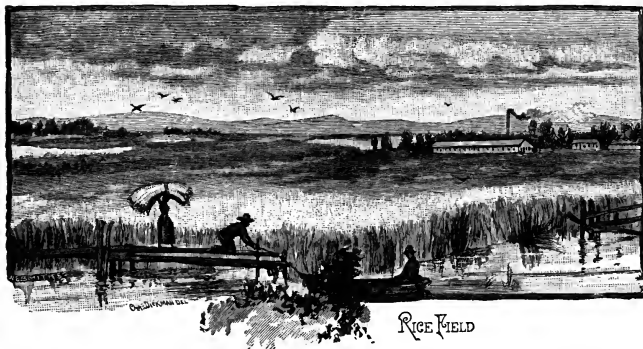
From what has been said of the products of this section you will readily see that the exports must be tobacco, oysters, rice, cotton, pitch, tar, turpentine, and oranges.

The chief imports are those of the northern section, except cotton, wool, and leather. Manufactured goods of all kinds are also largely imported.

The chief cities are Baltimore, Washington, Charleston, and Atlanta.

For Recitation:

IV. 1. Mines of coal and iron are found in the western mountains of the states south of the



A great number of negroes live in these states and work on the plantations. They were once slaves, but are now free.

The plantations of Virginia and Maryland are very extensive, producing great crops of corn and tobacco. The most extensive oyster beds in the country are found in the Chesapeake Bay, off the coast of these two states.

Rice, though yielding large crops on the upland, is best grown on land that lies a part of the time under water. The low, swampy coast of South Carolina and Georgia, which is overflowed by the tide, is therefore well adapted to the cultivation of rice, making these two the great rice states of the country. Cotton is, however, the most important crop. The best quality, called sea island cotton, is raised on the low islands near the coast.

All along the seacoast, from Virginia to Flor-

Chesapeake Bay. The low country raises tobacco, corn, rice, and cotton.

2. Negroes do most of the work on the plantations.

3. Corn and tobacco are the chief crops of Virginia and Maryland. Oyster fishing is important in Chesapeake Bay.

4. Rice and cotton are leading productions in South Carolina and Georgia.

5. Immense forests of pitch pine trees in North Carolina yield large supplies of turpentine, pitch, tar, and resin.

What is turpentine? Resin? Pitch? Tar? What are they sometimes called?

6. Name four things that distinguish Florida.

7. Name the exports of the southern states of the Atlantic Slope.

8. Why should these states import manufactured goods? Why should they not import cotton? Wool? Leather?

9. Name the leading cities of these states.

THE GREAT CENTRAL PLAIN.

I. POSITION—EXTENT—SURFACE—SOIL—CLIMATE.

You have already learned that the Great Central Plain which we are now to study lies between the Appalachian Mountains on the east and the Rocky Mountains on the west, and that it extends north and south between the Dominion of Canada and the Gulf of Mexico. From the crest of one of these mountain ranges to the crest of the other this plain takes up more than half the country occupied by the whole United States except Alaska.

You must not think, because it is called a plain, that this great region is all one level stretch of country. While it has mostly a level surface, you

will see that its eastern side, where it rises up into the Appalachian Mountains, must be mountainous, and so must be the western side where it runs up the sides of the still higher Rocky Mountains. Besides this, a line of low, scattered mountains runs east and west through the southern part of the plain, along the northern border of Alabama, Mississippi, Arkansas, and into the state of Missouri.

Because nearly all the country of this plain inclines toward the Gulf of Mexico, it is sometimes called the Gulf Slope. It is also frequently spoken of as the Mississippi Valley, because it is made up of slopes, nearly all of which incline toward the Mississippi River and its tributaries.

Nearly all the level country north of the southern line of Kansas, Missouri, and Kentucky is *prairie*, that is, country with a grassy turf and without trees.

The soil throughout nearly the entire extent of the Mississippi Valley and the states lying on the Gulf of Mexico is the richest in the United States. The climate, like that of the Atlantic Slope, is warm and winterless in the south, with very heavy rainfalls, growing colder toward the north as we approach the Canadian line.

For Recitation:

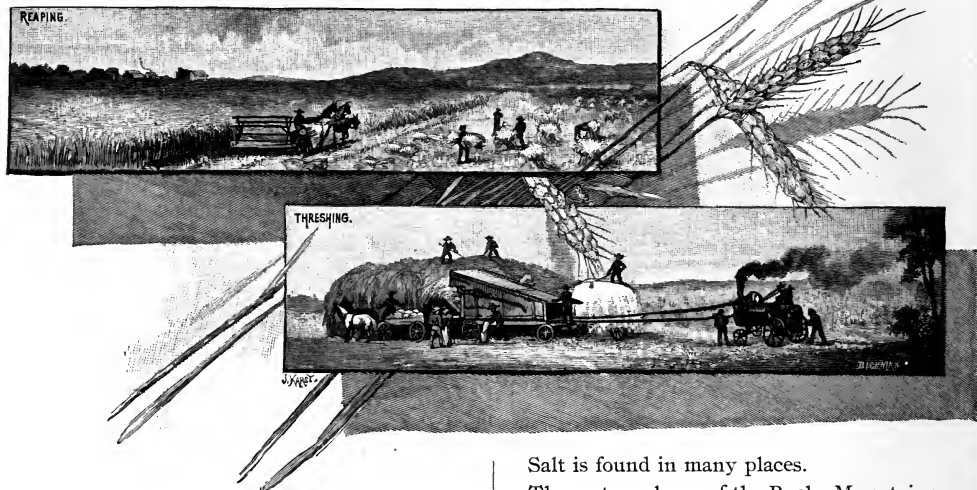
I. 1. Bound the Great Central Plain. How does it compare in size with the rest of the United States except Alaska?

2. This region is mostly level, but is mountainous on the east and west borders. Low mountains cross the southern part.

3. What other names are sometimes given to the Great Central Plain? *Why* is it sometimes called the Gulf Slope? *Why*, sometimes, the Mississippi Valley?

4. What is a prairie? What part of this Great Plain is prairie?

5. What can you say of the soil of the Great Central Plain?
The climate?



II. PRODUCTIONS.

For Reading:

In looking at the productions of the Great Central Plain, let us begin with those that were there before white men came. We shall find rich mines of coal and iron all along the western side of the Alleghany Mountains, especially in western Pennsylvania, for we must not forget that a part of Pennsylvania is in the Central Plain. We shall find the great coal beds extending over a large part of Ohio, Kentucky, Indiana, and Illinois; and coal and iron in large quantities in Missouri.

Copper is found along the southern coast of Lake Superior.

Large quantities of lead are found in a considerable region of country where Illinois, Wisconsin, and Iowa come together; also in Missouri, southern Kansas, and the Rocky Mountains. The richest mines of lead are in the mountains of southern Colorado.

Salt is found in many places.

The eastern slopes of the Rocky Mountains contain rich mines of gold and silver.

Besides the minerals that abound, there are, along the sides of the eastern mountain ranges, and for scores of miles among the hills that extend from the mountains into the low land, and on much of the low land itself, fine forests of chestnut, cherry, and walnut trees, so greatly prized for the manufacture of household furniture.

Away to the north, in Michigan, Wisconsin, and Minnesota, extensive forests of pine supply lumber for dwellings, stores, warehouses, and factories.

In the western part of this plain, wherever the prairies have not been plowed for cultivation, a tall and nutritious wild grass grows, furnishing pasture for thousands of cattle and horses in the summer and hay for them in the winter months.

But the chief source of the wealth of this region is found in the crops raised by tilling the soil. It is easy to make farms, because so many thousands of miles are prairie land, and all ready for



place to cotton fields and sugar plantations, the chief source of the wealth of this section.

Texas, the most southern and the largest state in the Union, is most noted for its immense herds of cattle.

For Recitation:

II. 1. Rich mines of iron, coal, copper, lead, and silver are found in different parts of the Great Central Plain. Look at the map and tell where each is found. Write three uses of lead.

the plow. Corn is the principal grain and yields large crops all the way from north to south. It is also the chief grain used to fatten cattle and hogs, which, with horses and mules, are raised in great numbers in all parts of this plain. Kentucky is the most famous state in the Union for its fine breeds of horses.

North of the line of the Ohio River great crops of wheat are raised, Dakota and Minnesota being the most important wheat-growing states.

This northern section is also rich in all the orchard fruits of the Temperate Zone—apples, peaches, cherries, plums, and pears—as well as in the common grains, hay, and vegetables, such as oats, rye, barley, potatoes, beets, turnips, etc.

Sheep and wool, also, add much to the wealth of this section.

As we go south, into the warmer and moister climate, we shall find, in the states that border on the gulf, the wheat fields and orchards giving

2. Cherry, chestnut, and walnut trees are found in the eastern part of this plain, and pine forests



COTTON FIELD.

in the north. Which for furniture? Which for building?

3. A rich wild grass grows in the prairies that have not been plowed.

4. Corn is the principal grain, and yields well everywhere from north to south. What is its chief use?

5. Cattle, hogs, horses, and mules are raised in

great numbers in all parts of the Great Central Plain. Kentucky is especially famous for its horses.

6. North of the line of the Ohio River large crops of wheat and other common grains, orchard fruits, and vegetables are raised. Dakota and Minnesota are the great wheat-growing states. Sheep and wool are sources of large wealth.

7. In the states on the gulf, cotton and sugar are the chief productions. Texas has immense herds of cattle.

III. OCCUPATIONS—CITIES.

For Reading:

When we know the productions of a country we can tell the occupations of the people, can we not? What, then, would you say the people of this Great Central Plain are doing? If you have read attentively what has been told of its productions your answer will be: Mining for coal, iron, copper, lead, gold, and silver; timber cutting for lumber to make furniture, and other lumber to build houses; hay cutting on the prairies and the meadows; grain farming; raising stock; raising fruit; and growing cotton and sugar.

What is done with all this vast production? The iron is made into locomotives, steam engines, farming tools, and countless other things; the lumber is worked into furniture and buildings; the cattle and hogs are made into beef and pork; the milk into butter and cheese; the wheat into flour; the cotton and wool into cloth—and this gives for thousands of people a new business, the business of manufacturing.

Can the people who live in this region use so much? And if not, what will they do with their surplus? And do they need nothing except what they raise and manufacture? If they do, how are they to get it? When we think of

these questions we shall find a great call for men to engage in trade, or commerce. Is commerce easy in this country? Look on the map and see. See that chain of great lakes at the north which ships and steamers may traverse through the St. Lawrence River and the canals to the Atlantic Ocean.

See the long Mississippi River, large enough for the passage of steamers from the gulf almost to Canada; and the Missouri River, that can take them into the northwest; and the Ohio, the Arkansas, and the Red Rivers, each furnishing a channel for multitudes of these craft of commerce.

As the country has a level surface, railroads are easily built, and you will find them everywhere throughout this region, where there is produce to be taken to market.

You will remember that great cities are built up by commerce and manufactures, and, therefore, when studying the map, you found in this rich country, on the Mississippi, the Ohio, and the Missouri Rivers, and on the Great Lakes, some of the largest and most prosperous cities of the United States.

Chicago is the largest grain and pork market in the world. Cincinnati and St. Louis are noted for their great wealth, manufactures, and commerce. St. Paul and Minneapolis are extensive milling and flouring cities. Kansas City is distinguished for its beef packing, and Denver is the commercial center of the gold and silver region.

For Recitation:

III. 1. Make a list of the chief occupations of the people of the Great Central Plain.

2. The chief manufactures are locomotives, farm machinery, hardware, furniture, beef and pork, butter and cheese, flour, and woolen goods.

3. The Great Lakes, long, navigable rivers, and

numerous railroads make the Central Plain an important commercial region. Grain, flour, beef, pork, cattle, horses, butter and cheese, and woolen goods are the chief exports.

4. Name the cities of this region mentioned in the map questions and tell where they are located. For what is Chicago distinguished? Cincinnati and St. Louis? St. Paul and Minneapolis? Kansas City? Denver?

THE GREAT PLATEAU REGION.

For Reading:

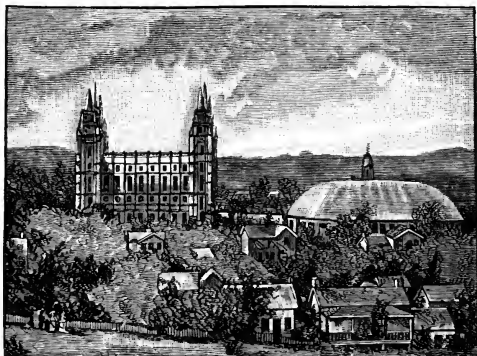
The region that we are now to study is that lying between the Rocky and Sierra Nevada Mountains. The country, which is wild and mountainous, is celebrated for its fine scenery, and abounds in great table lands,¹ or plateaus.

In Colorado there are four famous elevated natural parks, surrounded by high mountains which have not less than 200 peaks reaching a height of two and a half miles. Some of these parks are as large as the state of New Jersey.

Near the center of this division lies a great basin whose rivers either sink into the soil or flow into lakes that have no outlet. Of these rivers the Humboldt, in Nevada, is the most important, and of the lakes, Great Salt Lake, in Utah, is the largest. Salt Lake City, with streams of pure mountain water running constantly along the sides of its wide, clean streets, stands near this lake.

But while the country is generally mountainous, it must be remembered that there are some very pretty and fertile valleys and some broad and productive plains. Much of Utah and eastern Idaho offers very good farming land, and is quite well cultivated. This land is usually supplied with moisture by carrying water upon it through ditches cut from streams that flow through the country.

¹ Reading Hour: *Scribner's Geographical Reader*, pp. 66-70, On the Table Land.



TEMPLE AND TABERNACLE, SALT LAKE CITY.

In eastern Washington are wide stretches of plain, upon which large crops of wheat are annually raised. Much of the country is also well adapted to grazing, and cattle raising is an important industry.

The great wealth of the Plateau Region, however, is in its mines of gold and silver, the richest and most extensive in the world. The richest silver mines ever known have been found at Virginia City, Nevada. A little boy called this region the "Natural National Bank of the United States."

For Recitation:

1. What is the country between the Rocky and Sierra Nevada Mountains called? What is a plateau?
2. Four great natural parks are found in the plateau region of Colorado.
3. Near the center of the Great Plateau Region lies a basin whose rivers sink into the ground or flow into lakes that have no outlet.
4. Small strips of fertile land are found in this region. Where? There is also much good grazing country. To what industry does it give rise?
5. In what does the chief wealth of this coun-

try consist? What of the mines at Virginia City? What did a little boy call the Plateau Region?

THE PACIFIC SLOPE.

I. POSITION—SURFACE—CLIMATE—COAST LINE—SEAPORTS.

For Reading:

The states of this division are Oregon, Washington, and California. A part of each of these states lies in the great interior region that we have just studied, but the richest and most populous portions are found west of the Sierra Nevada Mountains.

Three celebrated farming valleys lie in this division; the valley of Pu'get Sound, at the extreme north in Washington; further south, in Oregon, the fertile valley of the Will ām'ette; and still further south the California Basin, or the valley of the Sacramento and San Joaquin Rivers.

The climate of these states does not vary so much from north to south as that of the Atlantic states. From west to east, however, there is considerable variation in moisture, much more rain falling near the coast than farther inland, and especially east of the Sierra Nevada Mountains.

The coast line of these states does not give many good harbors. San Francisco Bay, on whose shores the great city of San Francisco stands, is the best of these, and one of the best in the world. Puget Sound also affords good harborage, Tacoma and Seattle being the principal ports; and a fine harbor is found in San Diego Bay. The Columbia River carries ocean steamers about 100 miles into the state of Oregon. These steamers find harbor at the city of Portland, on the Willamette River, twelve miles from its mouth.

For Recitation:

I. 1. What states are found in the Pacific Slope? In what other division do they partly lie?

In which division are the richest and most populous portions of these states?

2. Name the three great farming valleys of this division. Tell where each lies.

3. The climate varies less from north to south than in the states of the Atlantic Slope. More rain falls near the coast than farther inland.

4. What of the coast line? Name the three harbors on the coast and their ports. Where is Portland harbor? How far from the seacoast?

II. PRODUCTIONS—MANUFACTURES—COM- MERCE.

For Reading:

The mineral wealth of this region is very great. The mountains of eastern and southern California yield millions of dollars in gold and silver every year, while the coal mines along the shores of Puget Sound supply the cities and manufactories of the Pacific states with fuel.

The forests of western Washington, bordering on Puget Sound, are the most valuable in the United States, furnishing timber for masts and spars of ships. Very valuable forests of fir and pine are also found in Oregon, and of redwood and pine in California.

In farm products Oregon and Washington are chiefly distinguished for the large quantity and excellent quality of wheat raised, though the common orchard fruits yield well and are of fine quality. Oregon apples are much sought in California markets.

California is by far the richest of the states of this division in the products of the soil. It is famous throughout this country and Europe for its wheat, orchard fruits, grapes, oranges, limes, and olives.

Cattle and sheep raising are important industries in California and Oregon, the wool crop

especially giving these states great prominence. Oregon is famous also for its salmon fisheries. More salmon are caught in the Columbia River than anywhere else in the world.

In California much attention is given to manufactures, especially to the manufacture of wines, raisins, flour, woolen cloth, canned and dried fruits; and refined sugars.

The exports of this region will be seen from its productions. From the ports of the north the exports are wool, ship timber, and canned goods—chiefly salmon; from San Francisco go wheat, flour, wines, lumber, woolen goods, fresh, dried, and canned fruits.

The imports through San Francisco from China, Japan, and Europe are very great. Only three cities in the United States have a larger foreign commerce.

For Recitation:

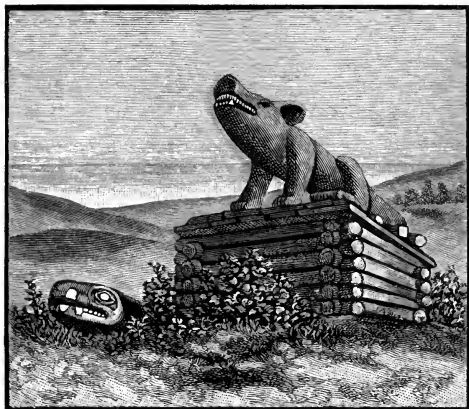
- II. 1. Mines—*Gold and silver, coal.*
2. Forests—*Where? What?*
3. Washington and Oregon—*Farm products.*
4. California—*Farm products.*
5. Cattle and sheep. Wool. Fisheries.
6. Name the manufactures of California.
7. Name the exports from the northern ports of this division. From the southern.
8. How does San Francisco rank as a commercial city?

ALASKA.

For Reading:

Though Alaska is neither a state nor a territory, we must not forget that it is now the property of the United States. It formerly belonged to Russia, and is about one sixth the size of the United States.

One third of Alaska is in the Frigid Zone. The part that lies in the Arctic Slope consists of frozen



AN ALASKAN GRAVE.

swamps; that part bordering on the Pacific Ocean has a mild and moist climate. The Yukon River, in Alaska, is one of the longest in the United States, and its sides are covered with evergreen forests.

The chief seal fisheries of the world are on the islands of Alaska. The seals are killed by clubbing them on the head. The skins taken are from the young males only. The fur of the seal is of a dark gray color, and is dyed before being made into clothing. There are but few white people in Alaska. Most of the inhabitants are Indians.

For Recitation:

1. Alaska formerly belonged to Russia, and is about one sixth as large as the United States.
2. The climate along the Pacific Ocean is mild and moist. The Yukon River is one of the longest in the United States.

3. Seal fishing is the chief occupation of the people of Alaska, who are mostly Indians.

REVIEW QUESTIONS.

NORTH AMERICA.

1. Name the four Natural Divisions of North America. Give the location of each, beginning with the eastern division. Into what two slopes is the Great Central Plain divided? By what is it divided? Where is the chain of Great Lakes located?

2. Who inhabited North America before the European settlers? Give the location of each class of the original inhabitants. How long ago were the first European settlements made? Where, in North America, is the French language chiefly spoken? Where does the English language prevail? The Spanish?

3. In what part of North America are iron and coal chiefly found? What is the advantage of their being found near together? Where shall we find copper and lead? Where are the gold and silver and quicksilver mines? What is the advantage in finding gold and quicksilver near together?

4. Name the largest three islands off the northeastern coast of North America. Where are the West India Islands? Name the four most important of these islands.

UNITED STATES.

1. What are the four Natural Divisions of the United States? What difference in the occupations of the people north and south in the Atlantic Slope? Why should this difference exist? What difference in occupations north and south in the Great Central Plain? Why? What makes commerce easy in this Plain? In which part of the Plain are the commercial facilities greatest?

2. Name two things that chiefly distinguish the Great Plateau Region.

3. Name the three largest farming valleys of the Pacific Slope? Where is each located? Name the best three harbors on the Pacific Coast. Where are gold and silver chiefly found? Coal? Salmon? What are the chief exports of this region?

THOUGHT QUESTIONS.—Why should Minneapolis, rather than New Orleans, be distinguished for the number of its flouring mills? Why Chicago rather than Boston for its pork and beef packing? Why Kansas City rather than Denver? Why should San Francisco rather than Chicago or St. Louis have a United States mint?

TOPICAL REVIEW OF THE UNITED STATES.

Write, in your own language, all of the geography of the United States that you know, using, as guides, the following topics:

Position.	People.
Extent.	Products. (Mineral, Vegetable, and Animal.)
Mountain Systems.	Occupations. (Farming, Manufacturing, Mining, Commerce.)
Drainage. (Slopes, Lakes, and Rivers.)	States. Cities and Towns. (Location, for what noted, etc.)
Climate.	

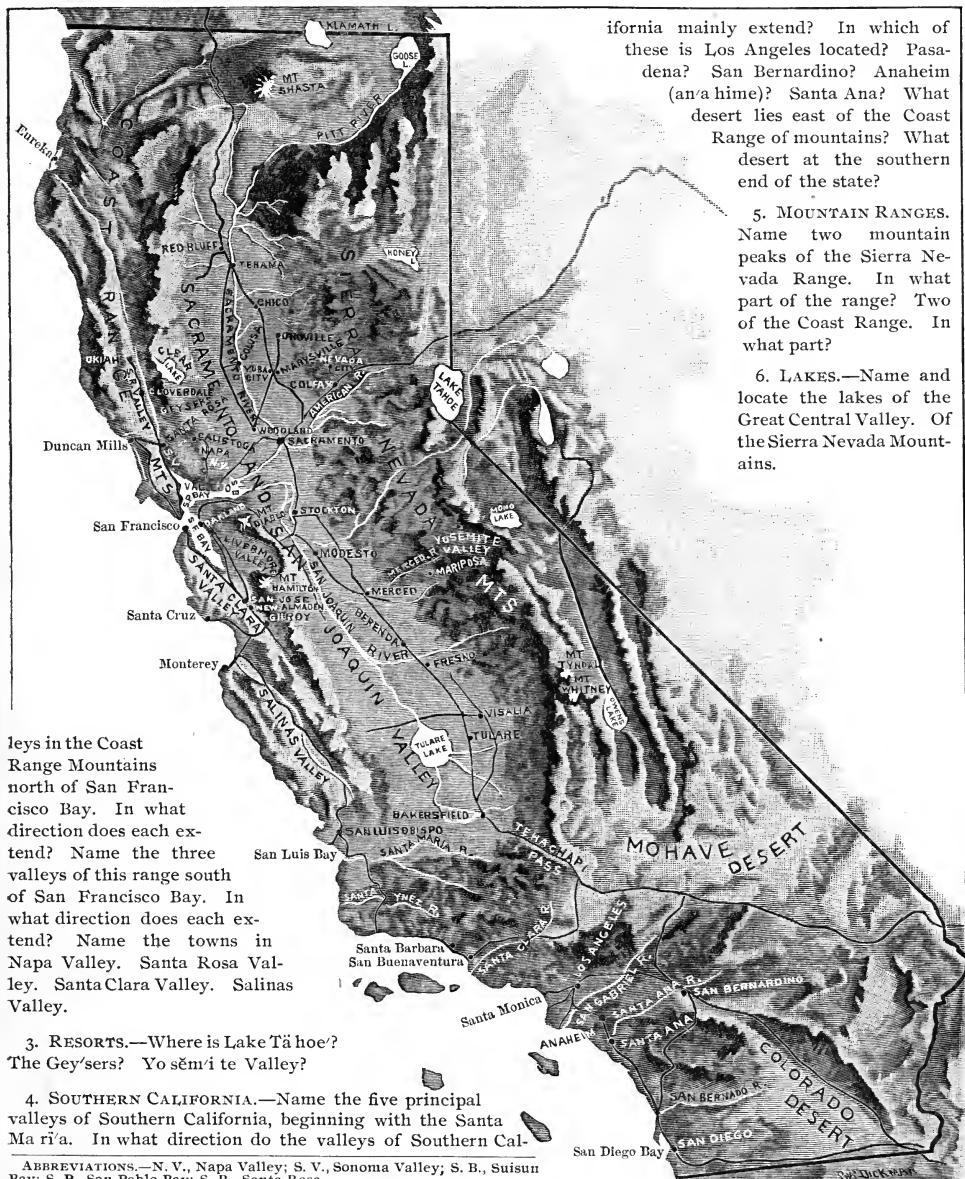
CALIFORNIA.

QUESTIONS ON THE PICTURE OF CALIFORNIA.

1. THE GREAT VALLEY OF NORTHERN CALIFORNIA. Name the great valley of Northern California. In what direction is it longest? What mountains bound it on the east? What on the west? What great mountain stands at its northern extremity? What mountain pass opens

from it into Southern California? Name the two chief rivers that flow through this valley. Describe them. *Describe the Pitt River. The American River. The Merced River.* Beginning at the north, name the towns marked on the picture in the Sacramento and San Joaquin Valley.

2. SMALLER VALLEYS.—Name the three smaller val-



ifornia mainly extend? In which of these is Los Angeles located? Pasadena? San Bernardino? Anaheim (an/a hime)? Santa Ana? What desert lies east of the Coast Range of mountains? What desert at the southern end of the state?

5. MOUNTAIN RANGES. Name two mountain peaks of the Sierra Nevada Range. In what part of the range? Two of the Coast Range. In what part?

6. LAKES.—Name and locate the lakes of the Great Central Valley. Of the Sierra Nevada Mountains.

leys in the Coast Range Mountains north of San Francisco Bay. In what direction does each extend? Name the three valleys of this range south of San Francisco Bay. In what direction does each extend? Name the towns in Napa Valley. Santa Rosa Valley. Santa Clara Valley. Salinas Valley.

3. RESORTS.—Where is Lake Tā hoe? The Gey'sers? Yo sēm'i te Valley?

4. SOUTHERN CALIFORNIA.—Name the five principal valleys of Southern California, beginning with the Santa Ma r'ia. In what direction do the valleys of Southern Cal-

ABBREVIATIONS.—N. V., Napa Valley; S. V., Sonoma Valley; S. B., Suisun Bay; S. P., San Pablo Bay; S. R., Santa Rosa.

San Diego Bay

NORTHERN CALIFORNIA—NATURAL FEATURES.

I. THE GREAT VALLEY AND ITS MOUNTAIN BOUNDARIES.

For Reading:

We have all seen a part of the state of California, but no one of us has seen the whole of it. If we were to go up in a balloon from one of the little valleys nestled in the mountains that extend along the eastern side of the state, all the objects below us would grow smaller and smaller as we ascend, the boys and girls would look no bigger than ants, and the school house about as large as a dog kennel. Soon we should be able to see beyond the mountains surrounding our valley. Hundreds of other mountains would come into view with ravines and small fertile valleys between them, and towns and mines on their sides.

Now, if an east wind should spring up, our balloon would move westward, carrying us out over the center of a great valley. Here, *if we could go high enough and see far enough*, we could get a view of the whole of the northern part of the state. We should see below us a valley more than fifty miles wide from east to west, and stretching hundreds of miles north and south. This valley is so large that five of the smallest of the United States could lie in it side by side. The whole northern part of the state would now look something as you see it in the picture on the preceding page—made up of high and low land, with lakes and rivers sparkling in all directions.

Extending along the whole length of the valley on the east we should see the high range of mountains from among which our balloon first rose. Another range would be seen to bound the valley on the west. Both ranges curve toward each other at the north, Mount Shasta seeming to hold them together where they meet.

In the south they bend together, too, and would meet, but for narrow passes which seem to be gates to let people out of the valley into the country beyond.

For Recitation:

- I. 1. A great valley 50 miles wide from east to west and about 400 miles long from north to south, lies in the central part of California.
2. A long chain of mountains bounds this valley on the east and another on the west.
3. At the north these two chains of mountains come together in Mount Shasta.
4. At the south they nearly meet, leaving only narrow passes through them.

II. THE RIVERS OF THE GREAT VALLEY.

For Reading:

With our balloon hanging over the center of this great valley we may look toward the north more than 200 miles away and see where the Sacramento River rises in a big spring not far from the foot of Mount Shasta, and where it is joined by the Pitt River, which winds down from the northeast corner of the state.

Looking north and south we should see, also, a line of water all through the middle of the great valley below us. At first it might be mistaken for one stream, but looking carefully we should see that a few miles north of the center of the valley the Sacramento makes a turn toward the west, and that what at first seemed to be a part of it is really a separate stream flowing northward from the mountains of the south.

This stream from the south is the great San Joaquin River, and we may observe that just before it reaches the Sacramento it, too, turns off

toward the west, and that both rivers are lost in a narrow bay called the Suisun. The great valley is named for these rivers—*The Sacramento and San Joaquin Valley*.

All along the valley many small rivers would be seen flowing into these large ones, but most of them come down from the mountains on the eastern side.

It is a beautiful sight to see the yellow grain fields all through this valley, dotted with green orchards and vineyards and bordered with forests on the mountain sides.

This is the richest farming land in the world, and gives homes and work to thousands of happy, busy people.

For Recitation:

II. 1. The Sacramento River starts from a spring near the foot of Mount Shasta, and flows south through the center of the great valley of California.

2. The Pitt River comes into the Sacramento near its source from the northeastern part of the state.

3. The San Joaquin River starts from the mountains in the southern part of the valley and flows north till it almost meets the Sacramento, when they both turn west and flow into Suisun Bay.

4. Many small rivers flow into the Sacramento and San Joaquin, most of them coming down from the mountains on the eastern side.

5. This valley contains the richest farming land in the world.

III. THE MOUNTAINS AND SMALLER VALLEYS.

For Reading:

A view of the mountains and the small valleys

that lie among them would be very interesting, as well as the view of the great valley we have just seen. We should find the eastern range of mountains much higher and rougher than the western. It is called the Sierra Nevada Range. The highest group of mountains in the state is in this chain, almost east of Lake Tulare. Mount Whitney and Mount Tyndall are each nearly three miles high. Many peaks in the range are covered with snow, and along the sides of the mountains, below the snow level, stand magnificent forests. Along its whole length the range is spangled with beautiful lakes.

The western chain is called the Coast Range, because it lies along the seashore. About midway from north to south the ocean breaks through this range and cuts a channel, which permits the waters of the Sacramento and San Joaquin Rivers to escape.

This opening is called the Golden Gate, and the water that comes through makes the San Francisco, San Pablo, and Suisun Bays.

North of these bays, instead of running on as one chain, the Coast Range splits apart into several little rows running nearly north and south, with long, narrow valleys between them. The Santa Rosa, Sonoma, and Napa Valleys are three rich valleys lying north and south among these mountains.

South of these bays the mountains are split apart in the same way, making the Salinas, the Santa Clara, and the Livermore Valleys.

The most noted mountains in this range are Mount Diablo and Mount Hamilton.

For Recitation:

III. 1. The Sierra Nevada Mountains lie on the eastern side of the state, and are higher and rougher than the western chain. How high are Mount Tyndall and Mount Whitney?

2. Fine forests stand on the sides, and many beautiful lakes lie in the hollows of this range.

3. The mountain chain along the seashore is called the Coast Range.

4. The sea breaks through the Coast Range and spreads out into broad inland bays.

5. The opening through which the sea breaks is called the Golden Gate, and the larger bays are named San Francisco and San Pablo.

6. Name three valleys that lie between the rows of the Coast Range on the northern side of these bays. Three on the southern side. Name the most noted mountains of this range.

SOUTHERN CALIFORNIA.

I. COAST RANGE AND DESERTS.

For Reading:

Now let us imagine ourselves hovering in a balloon over Mount San Bernardino—the highest mountain in the southern part of the state. We shall see a very different view from the one in the north.

South of the passes that lead into Southern California but one high range of mountains appears, although much of the country is mountainous.

This range seems to be a continuation of the Coast Range, though it soon leaves the coast and turns toward the southeast corner of the state. The line of the coast here changes its direction, curving also toward the southeast. Look at the picture and you will see the change. Different parts of this mountain range have different names, but the ranges of San Gabriel and San Bernardino are the most important of these divisions.

Northeast of this range we look upon one of the most cheerless parts of the earth's surface—the Mohave Desert. This desert extends eastward

far beyond the eastern edge of California, and northward on the eastern side of the Sierra Nevada Mountains as far as Lake Mono, nearly opposite the center of the Great Valley—a desolate, barren region, bearing occasional ridges of high rocky peaks, called the Lost Mountains.

West of this mountain chain, extending in a line from Mount San Bernardino to the southeast corner of the state, we may see a long, narrow tract of land in some places three hundred feet below the level of the sea. This tract is known as the Colorado Desert. The Gulf of California once filled the basin, and this barren hollow is the dry bed left by the water.

II. WEST OF THE COAST RANGE.

For Reading:

West of the Coast Range and the Colorado Desert there are many fertile valleys with beautiful mesas between them.

The direction of these valleys is very different from that of the valleys in the Coast Range at the north, for, as you see in the picture, instead of running north and south with the great mountain chain, like the northern valleys, they lie in an east and west direction, extending toward the sea nearly at right angles with the principal mountain chain. Of course you must understand that there are some low mountain ranges running east and west, or there could be no east and west valleys.

The most northerly of these valleys is the one drained by the Santa Maria River. South of this valley are the valleys drained by the Santa Inez and Santa Clara. These valleys slope to the ocean in a line almost directly westward.

Still further south are the valleys drained by the San Gabriel and the Santa Ana, whose waters flow to the sea by southwesterly courses.

All through Southern California, to the southern limit of the state, short rivers run toward the

ocean, watering the land and making it productive.

The region drained by these rivers is a country green with beautiful orange and olive groves and vineyards, while here, as in the north, thrifty cities and pretty farm- and school-houses dot the fruitful land.

For Recitation:

I. 1. South of the passes through the mountains into Southern California the Coast Range runs southeast, and is the only great range.

2. The San Gabriel and San Bernardino Ranges are the most important divisions of the Coast Range in the southern part of the state.

3. The country northeast of the Coast Range in Southern California is a great desert, called the Mohave Desert.

4. The Colorado Desert is a long and narrow basin, in some places three hundred feet below the level of the sea. It lies west of the San Bernardino Range of mountains and extends to the southeast corner of the state.

5. The Gulf of California once occupied the basin of the Colorado Desert.

II. 1. West of the mountains and the Colorado Desert, fertile valleys reach to the ocean.

2. The principal valleys of Southern California extend nearly east and west, instead of north and south, as in Northern California.

3. The most northerly of the valleys of Southern California is drained by the Santa Maria River; the next one south by the Santa Inez; the third by the Santa Clara; the fourth by the San Gabriel; and the fifth by the Santa Ana.

4. What do we see in the southern valleys?

FAMOUS CALIFORNIA RESORTS.

I. LAKE TAHOE.

For Reading:

Now that we have a picture of our whole state, you will be interested to know something of the resorts for which it is famous throughout the country. One of these is **Lake Tahoe**, six thousand feet high, among the Sierra Nevada Mountains. To visit it let us start from San Francisco in the morning. We shall cross the San Francisco Bay by steamer and take the cars on the eastern side. Riding toward the northeast we shall reach Sacramento about noon and get dinner. From there the road grows steeper and the train climbs more slowly through the foothills and over the summit of the Sierra Nevada Mountains.

In these mountains we shall pass the famous Cape Horn, where we make so sharp a turn around the mountain side that at one time both the engine and rear car are hidden from those who sit near the middle of the train, while one thousand feet below runs the American River.

Beyond Cape Horn we pass among mountains whose sides and summits have been washed away by the gold miners, but we lose sight of these when we enter the snowsheds.

These sheds are dismal passages, miles long, made of heavy planks, to keep the snow, which often falls from twenty to forty feet deep, from blockading the railroad track.

After stopping over night at Truckee, early the next morning we take the stage for Tahoe, which lies fifteen miles to the south, partly in California and partly in Nevada.

We ride along the winding Truckee River, which has its source in Lake Tahoe, past many lumber camps, and after a few hours' journey we suddenly come in sight of the lake, with its rim of purple and gray mountains.

How beautiful the water is! It seems so blue that the sky looks pale by contrast with it.



AN INLET OF LAKE TAHOE.

When sailing upon its surface we find that, in places, the color changes to a golden green, like that of a ripening grain field, but everywhere it is so clear that we can see the brown boulders and the polished pebbles and the speckled trout a hundred feet below us.

All around the edges of the lake are the reflections of the lofty mountains and the tall trees upon their sides and summits. All are upside down, of course, but the bark and branches and cones of the trees are distinct in form and color.

This beautiful lake is twenty miles long and ten miles wide, and, in some places, over a quarter of a mile deep. It is a lake of ice-cold water, supplied from the melting snows of the high mountains above it.

From Mount Tallac, the highest peak near the lake, can be seen fourteen smaller lakes in a cañon region that leads into Tahoe.

In the summer many people go there to breathe the pure air and amuse themselves by rowing and trout-fishing. Many hotels are built on the lake shore for the accommodation of these pleasure seekers.

In winter the snow falls very deep, sometimes burying the houses, and no one tries to live there then.

For Recitation:

I. I. TRIP TO TAHOE.—*Copy the following outline and fill out as indicated in the model. Trace the route on the picture:*

Direction from San Francisco.—	Northeast.
First mode of conveyance.—	By steamer.
Second mode of conveyance.—	By cars.
Noon station.—	
Character of road beyond.—	
Point of interest on the way, describe.—	
Snowsheds, describe.—	
Night station.—	
Third mode of conveyance.—	
Distance to the lake.	

2. DESCRIPTION OF LAKE.—*Arrange the following topics in a column, as in the above model, and fill out:*

Color of water; Transparency; Appearance of trees and mountains in the water; Extent and depth; Source of supply; Visitors; Objects of visits; Accommodations; Condition in winter.

II. THE GEYSERS.

For Reading:

The Geysers are a remarkable collection of hot springs about a hundred miles north of San Francisco, in a cañon of the Coast Range. Great numbers of people from other parts of the country visit them every year. At San Francisco, about noon, we may take a steamer and sail northeast across the bay, leaving Mount Diablo on our right and Mount Tamalpais far to our left.

Late in the afternoon we shall reach Vallejo¹ (val lā'ho) and take the train north for Calistoga. Here our route lies through the grain fields and vineyards of the fertile Napa Valley, and at dark we come to the end of the railroad, where we remain over night.

Next morning we climb into the six-horse stage and begin to dash along the steep, narrow road

¹ What is the common way of going to Vallejo from San Francisco?

which leads over the mountain ridge to the Pluton Cañon, in the branches of which the geysers are situated.

Here all kinds of vile smells seem mixed, and at every step we may pick up alum, sulphur, soda, magnesia, and other things that we have never seen before except in a drug store.

There is a constant sound of hissing, bubbling, and roaring. Steam comes whistling out of every hole. Hot water boils from behind the rocks and flows along the cañon. Our canes sink in steaming sand, and the rocks are as hot as if heated by fire.

The springs, of which there are over one hundred, are mostly in the bottoms of the ravines and the blow-holes are on the hillsides.

A large spring, called the Steamboat Geyser, sends off loud blasts of steam, so hot that it does not cool enough to be seen until it has passed six feet from the opening where it escapes.¹

One spring, laden with sulphur and black as ink, is called the Witches' Cauldron.

We may come home by another route. We can take a stage west to Cloverdale, and from Cloverdale we may take the cars south along the Santa Rosa Valley to San Francisco Bay. Here a steamer will be found waiting, in which we may cross to San Francisco.

For Recitation:

II. THE GEYSERS.—What are the geysers? Distance and direction from San Francisco? Where located? Repeat the first sentence of the Reading Lesson.

Write a short story from each of the two following outlines:

I. TRIP TO THE GEYSERS.—First mode of conveyance; direction; to what point; mountains on either side; second mode of conveyance; direction; through what val-

ley; to what point; third mode of conveyance; character of road.

2. DESCRIPTION OF GEYSERS.—Situation; odors; minerals; number of springs; location of springs; of blow-holes; Steamboat Geyser, describe; Witches' Cauldron.

3. Describe the return trip.

III. THE YOSEMITE VALLEY AND BIG TREES.

For Reading:

But of all our resorts the one most sought by visitors is the **Yosemite Valley**. By flying directly east from San Francisco, a bird would find this valley 150 miles distant, in the Sierra Nevada Mountains. If we start from San Francisco we cross the bay by steamer to Oakland and take a train southeast to Berenda. After a night's rest we set out northeast, traveling a short distance by railroad, and then taking a stage for a day and a half over the mountain ridges that lie between Raymond and the Merced River, whose headwaters flow through the Yosemite Cañon.

As we approach the valley our first view of it is from Inspiration Point. We pass from dark forests into an open glade, and all at once the picture is before us, obscured only by a floating lilac haze. Far beneath us flows the Merced River, its waters widening out into a mirror-like little pool.

A green lawn borders the stream, and along the sides of the cañon rise towering walls of granite nearly a mile high, with peaks and domes upon their summits.

El Capitan stands out boldly at the front. Further up the valley rise the Three Graces, and far away are seen the faint outlines of Cloud's Rest.

Waterfalls, looking in the distance like white threads and ribbons tossing and trailing down the sides of the cañon, come to join the Merced River at the bottom of the valley.

Descending from Inspiration Point we enter the

¹Why should the great heat of the steam make it invisible?

valley, which lies east and west. Here, pouring over the walls, are some of the falls that we saw



ON THE ROAD TO YOSEMITE FALLS.

from the distance. The Bridal Veil comes down from the wall on the right, and the Virgin's Tears from the one on the left.

Passing up the valley towards the east, we stand between El Capitan on the north and Cathedral Spires on the south. El Capitan has two sides, each half a mile across, meeting as the walls of a house meet on the outside. It is more than 3,000 feet high. Thirty hotels like the Palace, in San Francisco, might be built in front of it, one on top of the other, before reaching to its summit.

Half way up the valley, pouring over the wall of the north side, are the Yosemite Falls, leaping down 2,600 feet in three jumps. This is the

highest cataract in the world, though it has not the greatest amount of water. Sometimes the wind spreads the water out into a fan three hundred feet wide, and swings it as if it were a pendulum. There are many other wonderful sights, and we may spend whole days at a single place without becoming tired of the view.

Though so famous, this valley is not large. It is only about eight miles long and one mile wide. The floor of the valley is 4,000 feet higher than San Francisco Bay, and its walls in some places rise almost straight up 4,000 feet more.

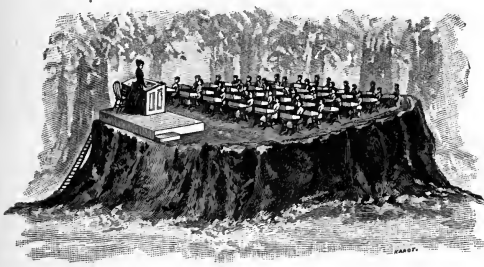
No one can own any part of it. The United States government long ago gave this valley and the Mariposa Grove of Big Trees to California for a perpetual pleasure ground, and the state has done much to add to its attractions and to provide comfortable stopping places for travelers.

On our way home we may visit the Big Trees. One tree, called the Grizzly Giant, requires a string nearly one hundred feet long to encircle it. One, called Abraham Lincoln, is 320 feet high. Just think how many men each six feet tall would have to stand one on another's shoulders to pick a cone from the top!

These trees are a kind of redwood. The name is a long one, but it is worth learning—*Sequoia gigantea*.

The Calaveras Grove of Big Trees is another group of *Sequoia gigantea*. It stands about seventy miles north of the Mariposa grove, and contains larger trees. One, called the Mother of the Forest, is 325 feet high. A tree of this grove has been felled. It took five men three weeks to cut it down. Parties sometimes dance on the stump of one of these trees as if it were the floor of a hall. A school could easily be seated upon it if it were near. A hole has been made through a standing tree large enough for the passage of a stage coach.

¹ Reading Hour: *Johannot's Geographical Reader*, p. 165, The Big Trees.



For Recitation:

III. THE YOSEMITE VALLEY.—*Write a short story from each of the three following outlines:*

1. TRIP TO YOSEMITE.—Air line direction from San Francisco; first mode of conveyance; to what point; second mode of conveyance; direction; to what point; direction from that point; mode of conveyance; time required.

2. DESCRIPTION OF YOSEMITE.—First view from what; at which end of valley; walls of the cañon; points seen, 1—, 2—, 3—; direction of valley; waterfalls on the south side; on the north side, 1—, 2—; El Capitan, describe; Yosemite Falls, describe; extent of valley; elevation of the bottom; height of the walls; ownership; settlement.

3. DESCRIPTION OF BIG TREES.—Nearest grove; direction from Yosemite; Grizzly Giant, size; Abraham Lincoln, height; kind of trees; second grove; direction and distance from Mariposa group; size of trees.

Why should the highest tree be named Abraham Lincoln?

MINING IN CALIFORNIA.

I. DISCOVERY OF GOLD—EARLY MINING.

For Reading:

When you think of the occupations of the people of California you may perhaps think first of what those in your own neighborhood are doing, but old settlers would be likely to think first of **Mining**, because it was through the mining of gold that California first became much known to the world.

Before gold was discovered very few settlers

had come to California. A few monks had established missions to convert the Indians, and these had been followed by a few Spanish and Mexican settlers, California having first belonged to Spain and then to Mexico. About two years before gold was discovered some Americans, also, had begun to come in; California about that time having become a possession of the United States. As soon, however, as gold was found, people came from all directions—from Mexico, South America, Europe, and Asia—but mostly from the eastern part of the United States, and in two years the population had increased from only a few Spaniards on the coast and woodsmen in the interior to 100,000 people, and California was made a state at once.

Gold was first found near Coloma, which is northeast of Sacramento, in the foothills, or lower slopes, of the Sierra Nevada Mountains. A man named Sutter had a sawmill there, and early in January, 1848, one of his hired men, named Marshall, saw some gold in the sands of the stream which turned the mill. The two men and their friends tried to keep the discovery a secret; but no news ever before went around the world so quickly, and soon people were on their way from every land in search of California gold.

At first they thought that gold was to be found only in the beds of streams, but they afterwards learned that it was all along the western slopes of the Sierra Nevada Mountains. It was in the rocks of the hills and ravines, and in the gravel that had been made out of these rocks by the action of the water for many thousand years. The work of the miners was to separate the gold from the rock or the gravelly soil.

The first mining was done by loosening the gravel with picks and shovels and then putting it into pans or rockers, or some other contrivance, and shaking and draining it till only the gold, which always falls to the bottom, remained. This was called *Placer mining*.

For Recitation:

1. 1. The discovery of gold in California brought the first large numbers of people.

2. Before that some monks had established missions, a few Spaniards and Mexicans had settled in the country, and a few people from the United States.

3. A man named Marshall first discovered gold in a stream of the Sierra Nevada Mountains, a little northeast of Sacramento.

Read carefully the second and third paragraphs and tell in what year California was made a state. What are foothills?

4. Gold was afterward found all along the western slope of the mountains in the rocks and in the gravel.

5. To make the gravel the rocks had been worn for thousands of years by water.

6. How was the first mining done, and what was it called?

II. HYDRAULIC MINING.**For Reading:**

In **Hydraulic mining** water takes the place of the pick and shovel. The water is led through an iron pipe down a steep slope, so that it will acquire great speed and force. At the beginning the pipe is four feet or more in circumference, but it gradually narrows until it is not more than six inches at the end where the water is discharged.

The water bursts out with terrible force, and tears down the gravel, clay, and bowlders of the bank against which it is thrown. The stream washes out and carries off more earth than many thousand men could remove in the same time with picks, shovels, and barrows.

This hydraulic mining has been followed all along the western slopes of the Sierra Nevada Mountains.

When the ground is hard, the miners often dig a passage into the bank and put in kegs of powder and explode it to loosen the soil and rocks, so that it will be easier for the water to wash away the mass.

When the water is turned on, it carries with it gravel and bowlders, rumbling and tumbling through a cut into a sloping channel lined with plank. This channel is called a flume, and leads off to a river or ravine. Gold always sinks to the bottom of this stream of debris, as its particles are heavier than the particles of earth or rock.

At the bottom of the flume are cross-bars of iron, called riffles, to hold the gold. Quicksilver is scattered here to catch the fine particles. It seems to try to hide the gold, for it covers every speck and makes it look silvery like itself.

After a certain number of days the water is turned out of the flume, and what has settled in the bottom is scraped out. The gold is then washed from the dirt in pans, and the mass, covered with quicksilver, is put into buckskin bags, through which all the quicksilver possible is squeezed.

Some still clings to the gold, and the mixture is called *amalgam*. This amalgam is heated hot enough to drive off the quicksilver as vapor. The vapor is then caught and cooled, thus becoming 'quicksilver again, and may be used in this way many times. The clean gold is now melted, run into molds, and sent to the mint for coining.

For Recitation:

II. 1. Hydraulic mining is done by throwing powerful streams of water against the mountains, thus tearing away the soil, gravel, and bowlders, among which the gold is hidden.

2. The soil and rock are sometimes first loosened by exploding powder in a chamber dug in the earth for that purpose.

3. The streams of water wash the loosened masses into a channel called a flume.

4. The gold settles in the bottom of the flume and is caught by quicksilver that has been placed there for that purpose.

5. The gold and dirt that have settled at the bottom are scraped up and the dirt is washed out.

6. The gold, enveloped in quicksilver, is then put into buckskin bags, and as much quicksilver as possible is squeezed through.

7. What is amalgam? How is the quicksilver in the amalgam got rid of? What is then done with the pure gold?

III. QUARTZ MINING.

For Reading:

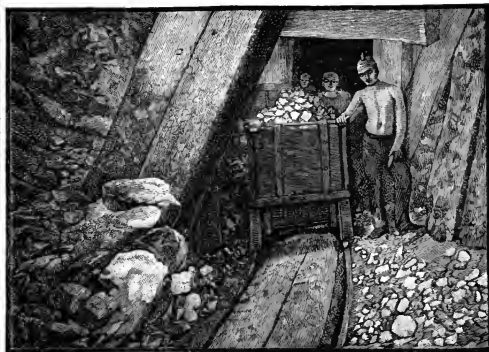
But little hydraulic mining is now done. *Quartz mining* is more common. This is carried on by digging and blasting drifts and shafts under the earth.

The drifts are passages that run horizontally into the sides of the mountain, following a shelf of gold-bearing rock called *quartz*. The shafts run perpendicularly down, like wells.

In the drifts the air is not very pure, and the miners have to work in cramped positions, often stooping, sometimes on their knees, sometimes lying on their backs picking at the rocks above. Almost always there is water dripping on them, and they stand in mud. Their only light comes from a sputtering candle stuck in the side of the drift, or passage.

The quartz is brought out in hand cars, and crushed into powder by solid iron pillars called stamps. Some of these stamps weigh five hundred pounds each, are driven by steam, and strike forty of their terrible blows in one minute.

The powdered rock is washed along a flume by



INTERIOR OF A QUICKSILVER MINE AT NEW ALMADEN.

a stream of water and passes through a sieve, the gold being caught by quicksilver, which is sprinkled all along its passage way. Then it is put through buckskin bags, as in hydraulic mining.

The quicksilver, so necessary in gold mining, comes chiefly from the New Almaden mine, near San José, though it is found in small quantities all along the Coast Range. It is found in beds of slate rock, and is mined by means of shafts and drifts, as in quartz mining.

The ore looks very much like common brick. It is put into an oven and heated until the quicksilver goes off as vapor. When cooled, the vapor is condensed into pure quicksilver, which is very heavy, and is kept and sold in iron flasks.

For Recitation:

III. 1. In quartz mining the rock containing gold is broken up by digging and blasting.

2. After the rock is broken, it is taken out and crushed to powder by great hammers, called stamps, which are worked by steam power.

3. The powdered rock is washed along a flume by a stream of water, and the gold is caught by

quicksilver, from which it is then separated, as in hydraulic mining.

4. Quicksilver is mostly found in a mine at New Almaden, near San José.

5. Quicksilver ore looks like common brick.

6. The ore is put into an oven and heated till the quicksilver goes off in vapor.

FARMING IN CALIFORNIA.

ORAL.—What kind of grain have you seen growing? Where? On whose farm? What farming work have you ever seen? Tell how it was done. Where have you seen fruit growing? What kinds? For what is each kind used?

I. IRRIGATING—GRAIN RAISING.

For Reading:

Grain raising is now a leading pursuit in California. It has not always been so. When gold was first discovered the country was only a grazing ground for cattle.

At first it was feared that good crops could not be raised because of the lack of summer rains, but it was soon found that the ground could be plowed in spring, and by sowing the seed after the first rains in the fall a fine harvest could be reaped the next year.

In some parts of the state farmers do not depend wholly upon rain to water their land. Ditches have been dug and connected with the rivers, by means of which they can flood the land with water whenever they wish.

In other places wells have been bored, through which streams of water gush up constantly, and these are conducted upon any land that needs moisture. Wells of this kind are called *artesian* wells, and these methods of watering are called *irrigation*.

The lasting prosperity of California began with

farming. In the early mining days nothing was permanent. Men lived in rude cabins, ready to move to a new mine any day, or return to their old homes in the east as soon as they had grown rich.

Now, when they found that farming would yield as rich returns as mining, many resolved to devote their attention to that. They sent for their families and began to build homes and school houses and towns, and now California produces almost as much grain as any state in the Union—wheat and barley being the principal kinds.

The great wheat and barley fields of the state are in the valley of the Sacramento and San Joaquin Rivers. Large crops of barley are also raised in the southern part of the state.

The farmers of California raise much more grain than can be used at home, and the surplus is sold to all parts of the world. In one year enough grain was raised to give 1,500 pounds to every one living in the state.

Some men own vast farms,¹ and it is an interesting sight to see their workmen breaking the surface of the ground with gang plows, each plow drawn by eight or more horses, and ten plows often working almost side by side, all of them together cutting a strip of land forty feet or more wide, and sometimes going a mile before turning.

Some machines cut the grain and thrash it at the same time. With such a machine four men and twenty horses can easily harvest thirty acres in a day, leaving the grain sewed up in sacks, in great piles, in the field.

Sometimes the thrasher works by steam, and the fire of the engine is fed by the straw from which the wheat has been thrashed. These machines cost so much that not every farmer can own one. Many hire a thrasher to do their work,

¹ Reading Hour: King's *Methods and Aids in Geography*, p. 302, A California Farm.

and the machinery, with a kitchen on wheels, is hauled from farm to farm. A cook accompanies the party to prepare meals for the workers, and a cow follows to furnish milk.

For Recitation:

- I. 1. In California ground is usually plowed in spring and the seed sowed after the first rains in the fall.
2. In many places ditches have been dug leading from rivers or reservoirs to farming land, and the water is carried through them out upon the land.
3. Artesian wells have been bored in some places, and the water run off upon the land through pipes.
4. What is irrigation?
5. What are the principal grain products of California?
6. What is the principal grain producing region of California?
7. Grain is often harvested by machines that cut it and thrash it at the same time.
8. Describe the way of working with a steam thrasher.

II. FRUIT GROWING.

For Reading:

In Fruit raising California surpasses any other part of the world.

Nearly every kind of fruit may be found in the orchards of the great valley of the Sacramento and San Joaquin; but peaches, pears, figs, grapes, nectarines, plums, and cherries are the principal fruits.

The foothills yield the most luscious fruits of every description. Here the best apples grow.

The vineyards and orchards in the valley of the Sacramento and San Joaquin Rivers are larger than in the smaller valleys of Santa Clara, Napa, Sonoma, Santa Rosa, and Livermore, though not so numerous. Picking fruit gives employment to many boys and girls in all parts of the state.

In the valleys of Southern California the apricot, orange, lemon, olive, fig, and grape grow in large quantities.

The grape is found in nearly all parts of the state, and its cultivation employs many people.



AN OLIVE BRANCH.

The largest vineyard in the world is in the northern part of the Sacramento Valley. It is so large that it would take a man a half day to walk around it, though going very briskly. More than three hundred men and boys are sometimes out among the vines of this vineyard picking grapes. The pickers come from San Francisco, Sacramento, and many other places.

For Recitation:

II. 1. What are the chief fruits of the Sacramento and San Joaquin Valley? Where do the best apples grow? What smaller valleys of Northern California are distinguished for fruit raising?

2. Where are the largest orchards and vineyards?

3. Name the principal fruits in the valleys of Southern California.

4. The largest vineyard in the world is in the northern part of the Sacramento Valley.

III. MARKETING AND PRESERVING FRUIT.

For Reading:

Every year, California sends thousands of tons of fruit to the eastern states and other parts of the world, where it is eagerly bought. At Sacramento, Los Angeles, San José, and some other towns, many men are kept busy every day during the fruit season loading fruit cars, which are sent east by the fastest trains.

Besides, we have establishments for drying and canning the fruit to preserve what we do not use or sell while fresh.

In the Santa Clara Valley, near San José, the canneries furnish work for many boys and girls,

as well as men and women. In most canneries children perform a large part of the work.

When drying apricots, plums, and peaches in the sun, the fruit is split, and the pieces laid carefully on shallow trays. Apples and pears are sliced to dry. Fruit is also dried by machines in a quicker and cleaner way than it can be dried by the sun.

One process, called *evaporating*, will, in a few hours, take enough moisture from the fruit to dry it properly, and still leave the fine flavor.

Most of the grapes are made into wine. In the great vineyard mentioned in the last lesson the grapes as they are picked are laid in large boxes, and afterwards carried in wagons to a great building, where there are machines to crush them, and large tubs, called vats, to hold the juice, which pours into them all day in steady streams from the crushers. This juice soon ferments and becomes wine, which is stored in casks so large that, even if they were lying on their sides, a man might stand upright in one.

In many vineyards the grapes are made into raisins. The largest raisin vineyard in the world is near Sacramento, but raisins are chiefly made in the country around Fresno, about two hundred miles south of this.

Many children help at the raisin making. The grapes are picked and placed on trays, and in about nine days the bunches are turned over and left a week longer. After this they are boxed and put into an air-tight or steam-heated room to sweat. This makes the stems and raisins soft, and they are then ready for market.

For Recitation:

III. Tell what you can of the following topics:

1. Shipping fruit.
2. Canning fruit.
3. Drying fruit.
4. Wine making.
5. Raisin making.

MANUFACTURES IN CALIFORNIA.

ORAL.—Have you ever seen a saw-mill? A blacksmith shop? A flouring-mill? A machine shop? A woolen mill? A shoe shop? A carpenter shop? A printing office? What was made in each? Tell, as well as you can, how it was done.

I. MANUFACTURE OF FOOD PRODUCTS.

For Reading:

The **Manufactures** of California are very important. The most valuable of them are *Butter* and *Cheese*.

The principal dairies are among the foothills of the mountains and near the coast, where the grass is good.

A dairy about fourteen miles south of San Francisco employs one hundred men. There are 18,000 acres in the tract, and it is divided into nine fields. Each field has in it a certain number of cows, and is well supplied with water.

In the center of each pasture is the milking place, and near it a platform on which stands a great double strainer. The milk is poured through this and carried off by pipes to the milk house, where it is placed in pans. The cream is skimmed every thirty-six hours, and churned by horse power.

One hundred pounds of butter are worked and salted in one mass, which is then divided and packed in rolls of two pounds each.

Across the bay, a few miles north of San Francisco, are many dairies famous for their fine butter.

The largest cheese dairy is near the coast, southwest of Lake Tulare. One thousand cows are milked there.

Next in importance is the manufacture of *Flour*. In the state are nearly 200 flouring-mills. Some work by water and some by steam. San Francisco has a greater number of mills than any other city of the state.

The largest flouring-mill in the state is on the northern side of San Pablo Bay. Vessels can sail up on one side of it for cargoes, and a side-track from the railroad runs on the other side to bring wheat from the valleys and carry away flour. This mill often makes 1,700 barrels of flour in one day. What a mountain of flour that would make in a year!

California *Sugar making* chiefly consists in taking raw sugar, obtained from other places, and purifying it in our refineries.

Raw sugar is a coarse, brown sugar made by boiling the juice of the sugar cane. Our supply is mostly obtained from the great plantations of the Sandwich Islands.

In refining it the raw sugar is dissolved in hot water, and pumped into the upper part of the building. Here it is heated very hot in pans, and a little lime added to destroy any acid matter that may be in the mixture. From these pans it is strained, still hot, through two bags—one coarse and one fine—and it drips out red, like wine. Next, it is filtered through a substance called bone-black, which catches all impurities, and the liquid becomes perfectly clear. It is then allowed to settle and harden into sugar. The part that does not harden is made into syrup.

Besides the sugar produced in this way, considerable attention is given to the manufacture of beet sugar. A large factory for this purpose is located in Santa Cruz County, and the raising of beets to supply it is a constantly growing industry.

For Recitation:

- I. 1. The most valuable manufactures of California are butter and cheese, and the next is flour.
2. Where are the principal butter and cheese dairies?

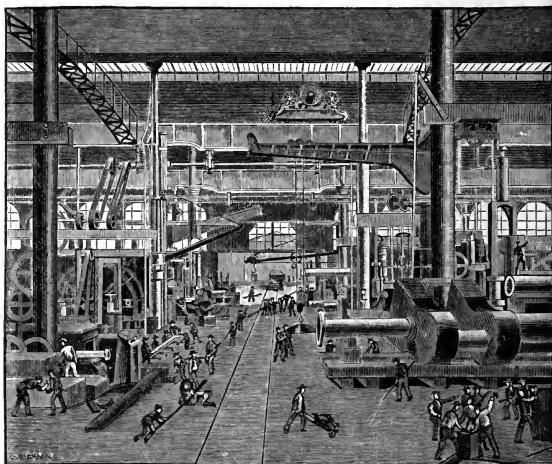
3. Describe butter making in a large dairy, and tell where such a dairy is.
4. In what part of the state are famous butter dairies found?
5. Where is the largest cheese dairy in the state?
6. How many flouring-mills has California, and how are they run?
7. What city of the state has most flour mills?
8. Where is the largest flouring-mill, and how much flour can it make in one day?
9. In what does the manufacture of sugar in California consist?
10. Describe raw sugar. Where obtained?
11. Describe the first step in refining sugar; the second; the third; the fourth.

II. LEATHER AND IRON.

For Reading:

Leather and Ironware are also among the large manufactures of California.

You do not need to be told from what leather is made. In its manufacture the hides are first soaked in water twenty-four hours, to clear them of blood. Then they are kept in lime for a week, to loosen the hair and flesh. At the end of this time they are taken out and scraped clean, after which they are piled up, with layers of bark between them, in large, deep, square tubs, called vats. They are then covered with water and left to stand for a number of days. There is something in the bark which soaks into the hide and makes it heavier and softer, and it comes out leather.



UNION IRON WORKS, SAN FRANCISCO.

The bark used in the California tanneries is supplied from the Chestnut Oak, which grows along the coast mountains. This oak is found mostly in the north, but is becoming quite scarce, as the tree dies when its bark is taken off.

Iron manufactures are produced chiefly in the foundries of San Francisco, and consist principally of mining and agricultural implements and saws for the lumber mills.

One of these foundries also builds steel and iron ships. Other iron works make barbed wire for fences and cables for street cars, for bridges, and for mines.

The iron products of the railroad shops at Sacramento are also very extensive. Two thousand men work there, and the buildings cover thirty-six acres of ground. In these shops are also made the desks and tables for hundreds of railroad offices and the woodwork and furniture for cars.

Extensive shops for repairing railroad cars are located in Los Angeles.

For Recitation:

II. 1. Leather and iron goods are largely manufactured in California.

2. Tell what is done with hides to make them into leather.

3. What bark is used in tanning, and where found?

4. Where are most of the iron manufactures of the state produced, and in what do they chiefly consist?

5. What other manufactures of iron are produced?

6. Describe the railroad shops at Sacramento. What articles besides those of iron are made there?

III. LUMBER—WOOLEN GOODS—CLOTHING.**For Reading:**

We have said nothing about the *Lumber mills*. To find these we must leave the cities.

These mills are near the forests. The chief timber regions of California are the redwood forests of the Coast Range, from Monterey northward, and the sugar pine forests of the Sierra Nevada Mountains.

Logs are cut high up in the mountains, and if too far away to be hauled by teams are sent down to the mills by slides, or flumes, which are built down the mountain sides. Some of these flumes are more than twenty miles long, and the logs whiz down so fast that you can hardly see them go by. Sometimes they are floated down the streams, and lie in great piles till the mill men are ready to saw them.

We must not forget the *Woolen mills*. The best blankets manufactured anywhere in the United States are made in California, and great quantities of other woolen goods, such as flannels

and cloth for men and boys' clothing, are also produced.

Other manufactures are considerable. If we were to visit San Francisco, we should find a great many rooms, in the upper stories of large buildings, where hundreds of sewing machines are clicking all day long in the manufacture of clothing. Many others are filled with men making saddles and harnesses. In others as many as one hundred men may be found engaged in making boots and shoes.

For Recitation:

IV. 1. Saw-mills for making lumber are near the redwood forests of the Coast Range and the sugar pine forests of the Sierra Nevada Mountains.

2. Logs are often sent from the forests down the mountain sides to the mills by long flumes.

3. California is celebrated for its manufacture of blankets, flannels, and woolen cloth for clothing.

4. Clothing, saddles and harness, and boots and shoes are largely manufactured in San Francisco.

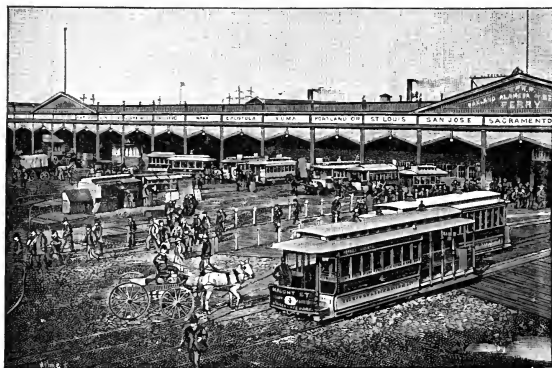
5. Write a list, to read in class, of all the things not mentioned in these lessons, that you know are manufactured in California.

A COMMERCIAL CITY.**For Reading:**

"What is commerce?" said Ned, as the teacher told the class that upon the following day they would talk of a city noted for its commerce.

Reuben raised his hand as a request to speak, and the teacher nodded consent.

"I think Ned would know what commerce is if he had remembered what we studied on the twenty-seventh page of our Geography," said he.



AT THE WHARF IN SAN FRANCISCO.

As it was found that several of the children had forgotten, they all took their Geographies, and the teacher talked with them again of commerce.

The next day, after this was understood, the class came together again to talk about the things to be found in a great commercial city. Several of the boys had visited San Francisco, and could tell what they had seen.

Upon alighting at the wharf they had joined in the moving crowd and had been hurried along to the street cars, which were standing on iron tracks that extended into the city for miles along the streets.

Some of the cars were drawn by horses, some were fastened to underground ropes of wire, called cables, and drawn by steam. These, full of people, followed one another through many streets along the iron tracks.

Going out in these cars, they saw for miles along the streets very large and very high buildings, filled with goods of various kinds for sale.

There were warehouses and stores filled with dry goods, hardware, boots and shoes, furniture, drugs, carriages, stoves, grates and mantels, hats and caps, millinery, groceries, cured fish, leather,

salted and smoked meat, crockery, pianos and organs, and with many other things—all to be sent out to other towns in exchange for money. When the money was received it was to be sent out again for more goods.

They saw many things besides—things that are always to be seen where these great exchanges are made.

They saw hundreds of large and heavy wagons, some drawn by two horses, some by four, some by six, driven in all directions, carrying loads from these warehouses and stores to ships or railroad cars, and bringing loads from ships and cars to the warehouses and stores.

On some streets were seen vegetable and fruit markets filling up whole blocks. On others there were markets for the sale of meat, fish, eggs, butter, cheese, and other articles of food.

The stores were full of clerks. Some were selling goods, and others writing at desks. In some stores more than a hundred clerks were occupied in this way.

In one very high building they found, on the upper floor, nearly a hundred people all working at the same time on telegraph instruments, making a noise that was almost deafening, while a great many boys in blue uniforms were seen hurrying along the streets with messages for the people who live in the city.

In every block in some parts of the city were found banks, express offices, insurance offices, and real estate offices, filled with a busy lot of proprietors and clerks.

The boys began to count the hotels, but stopped when told that there were several hundred of them. In a large commercial city there must always be many hotels to accommodate the people who visit the city to buy and sell goods. Some of these hotels are very large and beautiful,



and richly furnished. The picture shows you the open space that may be seen on the interior of one of them. Such a space is called a *court*.

Before night the boys had grown tired with sight-seeing, with the din of wagons on the streets, and the rush of people on the pavements; but they had learned some things about a commercial city that they would never forget.

For Recitation:

1. What is commerce?
2. After reading this lesson through carefully,

close the book and write, in your own language, what you can remember of the things to be seen in a commercial city. Bring this to the class to read.

3. From the open book, write, in a column, all the articles of commerce that are mentioned in the lesson. In another column write all the other articles of commerce that you can think of. Bring this, also, to the class to read.

4. Name all the classes of people that you can think of who help in the business of commerce, such as *merchants*, *clerks*, etc.

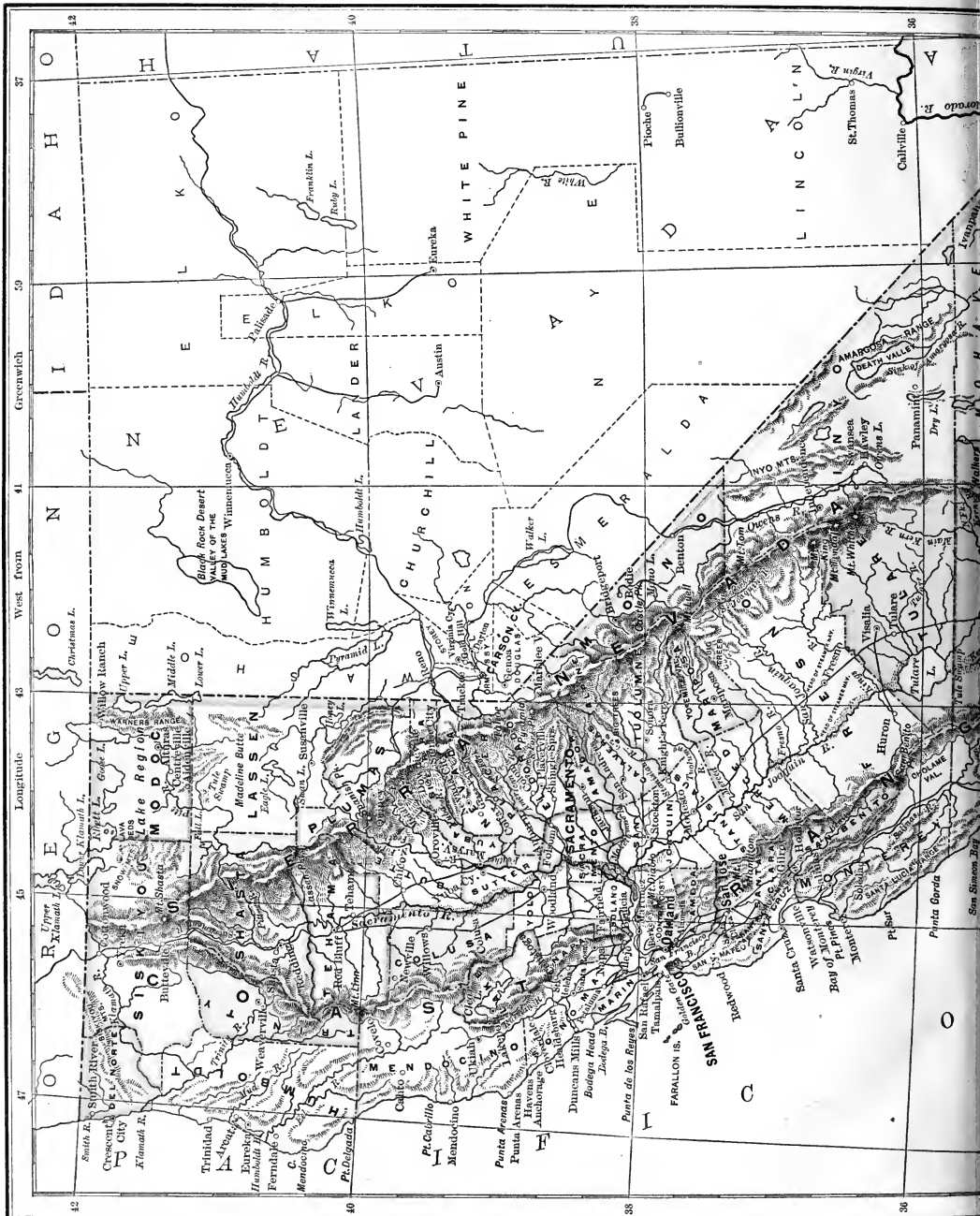
CITIES AND TOWNS.

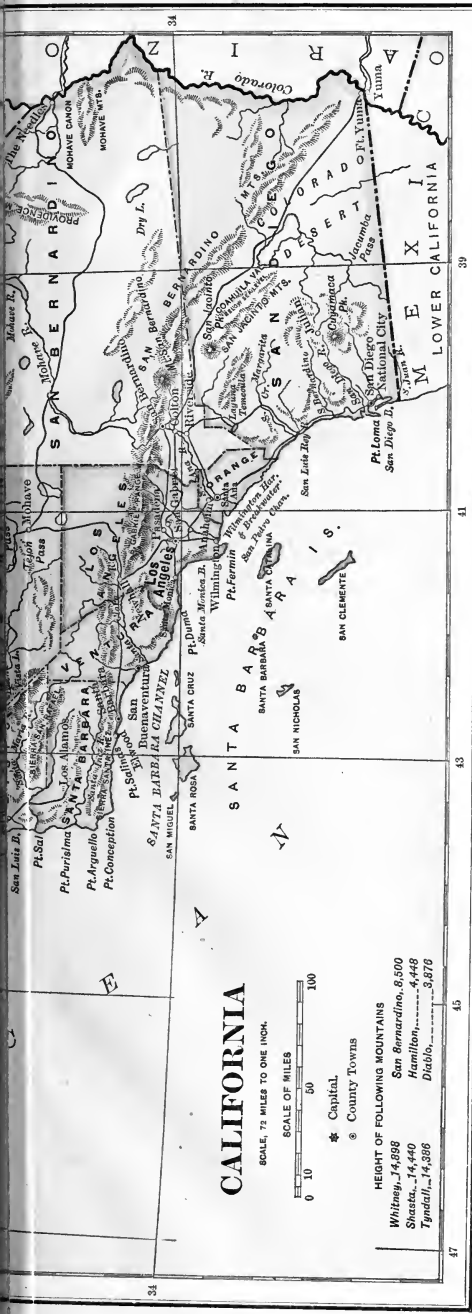
[Have pupils write a description of their own town or neighborhood. Include the *direction* and *distance* from San Francisco and Sacramento by the usual routes of travel. Many of the descriptions below were written for this book by the pupils of schools in the towns described. The distances from San Francisco are the distances by rail, except where otherwise stated. The map questions should be studied before the description of towns. It is not intended that these descriptions shall be memorized.]

I. SAN FRANCISCO AND SUBURBAN TOWNS.

San Francisco is situated at the northern end of a peninsula which is washed on the west by the Pacific Ocean, on the north by the Golden Gate, and on the east by San Francisco Bay. The city stands on the eastern side of the peninsula, though the unoccupied land belonging to it extends westward to the Pacific Ocean and embraces the whole county of San Francisco. The first settlement was made here in 1777, by the Spaniards, who gave it the name of Yerba Buena (bwá'ná) (*good herb*). Seventy years afterward the name was changed to San Francisco. The city is chiefly distinguished as a commercial city, and, though ninth in population among the cities of the United States, it ranks fourth in commerce. Its importance as a manufacturing







QUESTIONS ON THE MAP.

[Questions in italics to be answered from the open map.]

NATURAL FEATURES.—What range of mountains along the eastern side of California? Along the western side? What high mountain joins them at the north? Mt. Whitney and Mt. Shasta are the highest two mountains in California: In which range are they? In what part of the range? What great valley lies between the Sierra Nevada and Coast Ranges?

The following are some of the rivers that drain this valley; describe them, telling through what counties they flow:

Sacramento; San Joaquin; Feather; American; Stanislaus; Merced.
 Through what famous mountain valley does the Merced River run?
 The following are some of the rivers that drain the counties bordering the Pacific Ocean; describe them, telling through what counties they flow:
Klamath; Eel; Russian; Salinas; Santa Maria; Santa Inez; Santa Clara; Santa Ana.

In what county is Yosemite Valley? In what direction are the Big Trees from Yosemite Valley? Give the direction of the following from San Francisco:

Mt. Shasta; Mt. Whitney; Mt. Tyndall; Tehachapi Pass; Mt. San Bernardino; Mt. Ta'malpais (Pico); Mt. Diablo; Mt. Hamilton [seat of the Lick Observatory]; Yosemite Valley; Lake Tahoe; Mono Lake; Clear Lake.
 Give the direction of San Francisco from each of the above.

COUNTIES.—Beginning with Del Norte County, write in one column the

names of all the counties that border the Pacific Ocean, and opposite each, in a column at the right, the name of the county seat.

In a similar way write a list of all the counties on the eastern boundary of the state, beginning with Modoc. What county is in both these lists?

Write a list of all the counties that lie mostly in the great valley between the Sierra Nevada and Coast Ranges, beginning with Shasta. Which of these extend into the Sierra Nevada Mountains.

Write a list of the eight remaining counties, and tell where each is situated. **TOWNS AND CITIES.**—Describe the position of San Francisco. Give the direction from San Francisco of each of the following towns:

Oakland; Alameda; Berkeley; San Rafael; Sacramento; Santa Rosa; Eureka; Napa City; Woodland; Marysville; Chico; Nevada City; Grass Valley; San José; Santa Clara; Santa Cruz; Monterey; Stockton; Modesto; Merced; Fresno; Visalia; Bakersfield; Los Angeles; Pasadena; San Bernardino; Riverside; San Diego.

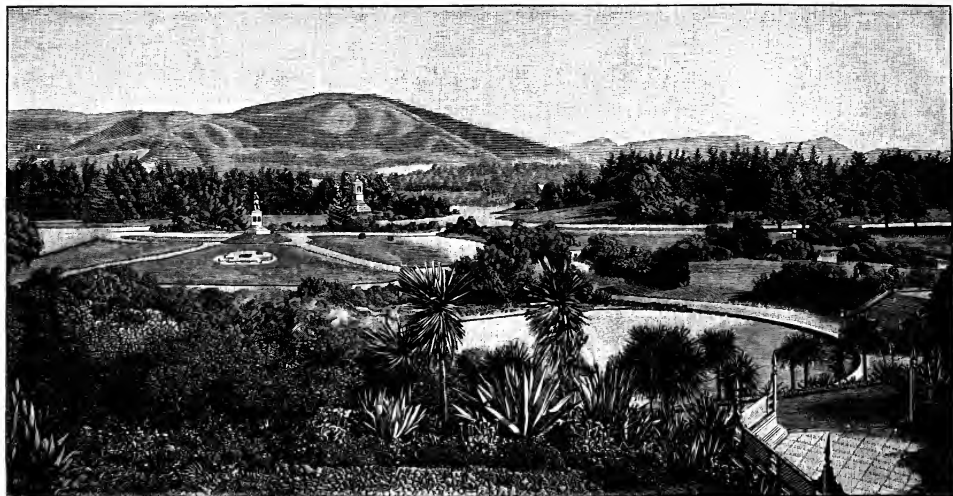
Give the direction of San Francisco from each of the foregoing.

[To answer the following questions, see Map of United States.]

In which of the four great natural divisions of the United States, in what part of the division, and in what direction from San Francisco, is each of the following products chiefly found:

Cotton; rice; coal; corn; cattle; tobacco; cod and herring; butter and cheese; salmon; gold and silver.

Model: Cotton is chiefly raised in the southern states of the Great Central Plain, southeast from San Francisco.



A VIEW IN GOLDEN GATE PARK.

city is also great, the larger part of the manufactures of the state, except lumber, flour, and liquors, being produced here. The principal business streets are Market, Kearny, Montgomery, and Sansome.

Golden Gate Park is the chief resort for pleasure. This park contains more than 1,000 acres of land, most of which is laid out in beautiful grass plats, flower beds, little groves of trees and shrubs, shady walks, and fine roads for driving. Lately, a deer park has been added, and a large space fitted up as "children's quarters," where the little folks amuse themselves with games, ride on the merry-go-rounds or on the donkeys, drive the goat-carts, and enjoy the swings, seesaws, spring-boards, or the May-pole. The park is reached from the city by several lines of cable railways.

Over 40,000 pupils attend the excellent public schools of San Francisco, and more than 12,000 are in attendance upon the private schools. In one of the high schools of the city the pupils are

taught drawing, and modeling in clay. The boys of this school work in wood and iron, and the girls are taught sewing. Drawing, modeling, and sewing are taught to some extent in nearly all the schools of the city.

The population in 1880 was 234,000. It is now estimated at 315,000. Oakland, Alameda, and Berkeley are suburban cities lying across the bay to the east, in the county of Alameda. San Rafael, another suburban town, is in Marin county, on the north side of the bay.

Oakland, 6 miles from San Francisco, is its most important suburb. From early morning till late at night, ferry-boats and trains of cars carry passengers every fifteen minutes between the two cities. A large number of people who do business in San Francisco reside in Oakland. The climate, like that of most of the cities of the state on the seacoast, is cool and pleasant in summer and without excessive cold in winter. The city is noted for its healthfulness, the beauty of its streets and homes, its parks of live oaks, its excellent public and private schools, including a public high school of the first rank, and its well sustained churches. It is the seat, also, of considerable trade and manufacture. The site of the

city is generally level. The population in 1880 was 34,555. It is now (1890) estimated at 60,000.

Alameda, 9 miles from San Francisco, lies on the east side of San Francisco Bay, south of Oakland. The climate of Alameda is warmer in summer than that of Oakland, though cooler in winter. It has half-hourly trains and ferry-boats to San Francisco. It is chiefly a city of residences, many of which are very handsome. It has good public schools, good streets, stone sidewalks, and is lighted by electricity. Its water supply is derived from artesian wells. The population in 1880 was 5,000. It is now (1890) estimated at 11,000.

Berkeley, 10 miles from San Francisco, lies north of Oakland, on the same side of San Francisco Bay, and directly opposite Golden Gate. It is a rapidly growing town, and contains the University of California, numerous academies, and excellent public schools. The state asylum for the blind and the deaf and dumb is also located in Berkeley. Like Alameda, Berkeley is connected with San Francisco by half-hourly trains. The population in 1880 was 2,334. It is now (1890) estimated at about 5,000.

San Rafael, 15 miles from San Francisco, is a favorite summer resort, and has one of the finest hotels in the state. It is three miles from San Pablo Bay, and is noted especially for its excellent water and fine climate. It has many fine residences and excellent public schools. It is connected with San Francisco by two railroad lines and ferries, which make frequent trips during the day. The population in 1880 was 2,300. It is now (1890) estimated at 3,300.

II. THE CAPITAL OF THE STATE.

Sacramento, 90 miles from San Francisco, is situated on the left bank of the Sacramento River, just below the entrance of the American River into the Sacramento. It stands in the midst of an extensive, fertile, and highly cultivated plain, producing orchard fruits, grapes, grain, and hops. Railroads extend from it in five directions. Steamers of considerable size also ascend the river to this point. Manufactures are extensive and growing. The car shops of the Central Pacific railroad, covering, with their yards, thirty-six acres of ground, are located here. Other important manufactures are of flour,

carriages, and malt liquors. Sacramento has good public schools and a college. The capitol is one of the most beautiful public buildings in the United States. The population in 1880 was 21,420. It is now (1890) estimated at 30,000.

III. TOWNS AND CITIES NORTH AND NORTH-EAST FROM SAN FRANCISCO.

Santa Rosa, 51 miles from San Francisco, is situated on the San Francisco and North Pacific railroad, in a region producing a great variety of fruits and grain. It has an important trade in fruits and wine. It is also noted for its excellent public and private schools. The population in 1880 was 3,616. It is now (1890) estimated at 7,000.

Eureka, 216 miles (by sea) from San Francisco, is a seaport situated on Humboldt Bay. Its chief importance arises from its trade in lumber, lumber products, wool, and butter. The immense redwood forests of Humboldt County furnish most of its lumber. The population in 1880 was 2,639. It is now (1890) estimated at 6,000.

Vallejo (val lă'ho), 25 miles by water (33 by railroad) from San Francisco, and the largest town in Solă'no County, is at the junction of Carquinez (kar kee'nez) Strait and Napa River. Vallejo is finely located on rolling land, and has, on Mare (mă'ră) Island, in front of the town, a United States navy yard, whose operations employ many workmen. Great quantities of wheat and flour are shipped to all parts of the world from its extensive flouring-mills. Excellent pressed brick and terra cotta ornaments for fronts of buildings are sent from the manufactory there. The population in 1880 was 6,000. It is now (1890) about the same.

Napa City, 46 miles from San Francisco, is situated in the southern part of one of the most important grape-growing regions of the state. It is located on Napa River at the head of tide water, and connects with San Francisco both by water and rail. It communicates also by telegraph and telephone. It has a mild climate, and is the center of an extensive fruit and berry region. Napa is about six miles from Soda Springs, and one mile from one of the state asylums for the insane. The Veterans' Home, an institution for the care of disabled soldiers, is located eight miles from Napa City, in Napa County. The important industries are tanning, manufacture of flour, woolen goods, glue, and wine. The manufacture of wine is the chief of these. The population in 1880 was 3,731. It is now (1890) estimated at 5,500.

Woodland, 86 miles from San Francisco, lies about six miles west of the Sacramento River, in a beautiful grove of natural oaks. Large vineyards, wheat fields, and clover meadows are the chief features of the surrounding country. The chief trade is in wheat, and the principal manufactures are woolen goods, flour, malt liquors, wine, and brandy. The buildings are generally handsome and the streets wide and clean. The town is lighted by electricity. The population in 1880 was 2,257. It is now (1890) estimated at 4,500.

Marysville, 142 miles from San Francisco, is a pleasant town, situated in a fertile region between the Yuba and Feather Rivers at their junction. Most of the grain from the surrounding country is shipped from this point, which is also the center of quite an extensive fruit producing region. The manufactures are chiefly of woolen goods, flour, and machinery. The canning of fruit is also an important industry. The Feather River is navigable to this place, all the year, for light draught steamers, which run between this city and San Francisco. The streets are broad and well graded. The city is lighted by electricity. The population in 1880 was 3,431. It is now (1890) estimated at about 6,000.

Chico, 186 miles from San Francisco, is the largest town in Butte County. It is located on the California and Oregon railroad, about six miles east of the Sacramento River. It is a beautiful, well built city, in the center of a fertile region of great extent. It has a large trade in lumber, which is brought from the Sierra Nevada Mountains in a flume forty miles long. Its manufacturing establishments are foundries, wagon shops, flouring-mills, and fruit canneries. It has a large trade in wheat and fruit. Chico has excellent public and private schools. Here, also, is located one of the three State Normal Schools. The population in 1880 was 3,300. It is now (1890) estimated at 6,000.

Redding, 234 miles from San Francisco, the largest town in Shasta County, is situated on the west bank of the Sacramento River, and on the line of the California and Oregon railroad. The town is chiefly supported by the industries of agriculture and of placer and quartz mining. The last is rapidly increasing in importance. The population in 1880 was 900. It is now (1890) estimated at 3,000.

Nevada City, 166 miles from San Francisco, is a pleasant mountain town, situated on a clear stream of running water. It was formerly an important mining town, and still possesses rich mineral resources. The public schools have an excellent reputation. The population in 1880 was 4,022.

Grass Valley, 161 miles from San Francisco, is

situated in Nevada County, about five miles from the county seat. Its quartz mines are the most productive in the state, and are the chief source of its wealth. Much attention is given to public schools. The population in 1880 was 4,500.

IV. TOWNS SOUTH, EAST, AND SOUTHEAST FROM SAN FRANCISCO.

San Jose, 46 miles from San Francisco, is located in the rich valley of Santa Clara. This valley was among the first in the state to be put into cultivation, and is now very highly improved. The country about San José is covered with orchards and vineyards. Prunes, apricots, peaches, pears, cherries, grapes, and berries are raised in abundance and of excellent quality. The ground on which the city stands is level, and the buildings are attractive. It is situated about six miles from the southern end of San Francisco Bay, which removes it from the fogs of the seacoast, but not beyond the cooling airs of the ocean. It has, therefore, one of the most delightful climates in the state, and is celebrated for its pleasant homes and beautiful private gardens. It is the seat of the oldest Normal School of California. The population in 1880 was 12,567. It is now (1890) estimated at 21,000.

Santa Clara, 43 miles from San Francisco, lies three miles west of San José, in the same county. It is the seat of Santa Clara College and of the University of the Pacific. A wide and beautiful avenue, called The Alameda, lined with shade trees, connects it with San José.

Santa Cruz, 121 miles from San Francisco, situated on the north side of Monterey Bay, is a popular summer resort for pleasure. It has fine sea bathing and charming drives in the mountains, and is surrounded by a well timbered country. The population in 1880 was 3,900. It is now (1890) estimated at 6,000.

Monterey, 125 miles from San Francisco, is a celebrated pleasure resort, and is situated on the south side of Monterey Bay, in Monterey County, having one of the best harbors in the state. An eighteen-mile drive along an avenue bordered by cypress trees is one of its chief attractions to visitors. It is one of the oldest towns in the state, and was the capital of California under both Spanish and Mexican rule. It is also the seat of the old California Mission of Mt. Carmel. The population in 1880 was 1,400. It is now (1890) 2,000.

San Luis Obispo, 248 miles from San Francisco, is situated nine miles from the bay of the same name, in the midst of a picturesque country made up of steep hills and fertile valleys. The climate is agreeable, not being subject to extremes of heat or cold. The town is lighted

by electricity, has telegraph and telephone communications, and street railways. Its seaport is Port Harford, with which it is connected by rail. The city is built on the site of the old Mission of San Luis Obispo de Tolosa, which was founded in 1772. The population in 1880 was 2,500. It is now (1890) estimated at 3,800.

Santa Barbara, 285 miles (by sea) from San Francisco, is situated upon a channel of the same name. It is noted for its mild climate, which attracts many people who wish to escape cold winters and hot summers. It has a safe harbor, easy of access, and is connected with San Francisco by a line of steamers and by the Southern Pacific railroad. Near the city are found the most celebrated olive orchards in the state, and the largest bearing walnut orchard in America. Lima beans are a leading product of the surrounding country, and over 1,000,000 pampas plumes are sent from here annually. The population in 1880 was 3,460. It is now (1890) estimated at about 9,000.

Stockton, 91 miles from San Francisco, is situated on Stockton Slough, a short branch of the San Joaquin River. This slough is navigable for steamers, which ascend the river from San Francisco. Stockton is surrounded by a fertile wheat and fruit region, and has a large trade in wheat and wool. Its manufacturing interests are of the first importance. Natural gas, recently discovered, supplies abundant light and fuel. One of the state asylums for the insane is located here. The public schools, including an excellent high school which prepares students for the State University, are among the best in the state. Stockton is rapidly growing. The population in 1880 was 10,000. It is now (1890) estimated at 15,000.

Modesto, 114 miles from San Francisco, is a clean, pleasant town, situated in a large and fertile plain, mostly devoted to raising wheat. It is important as the shipping point for the products of the rich country that lies around it. The population in 1880 was 1,700. It is now (1890) estimated at 3,500.

Fresno, 207 miles from San Francisco, in the valley of the San Joaquin River, is the center of the chief raisin growing region of the state, and is also noted for the manufacture of flour. The country around Fresno has been largely settled by colonies, whose members own and cultivate small tracts of land. In this way it has become thickly settled and highly productive. For a number of years Fresno has had a rapid growth in population and prosperity. The site of the town is level, and the climate in summer is very warm. The population in 1880 was 2,000. It is now (1890) estimated at 10,000.

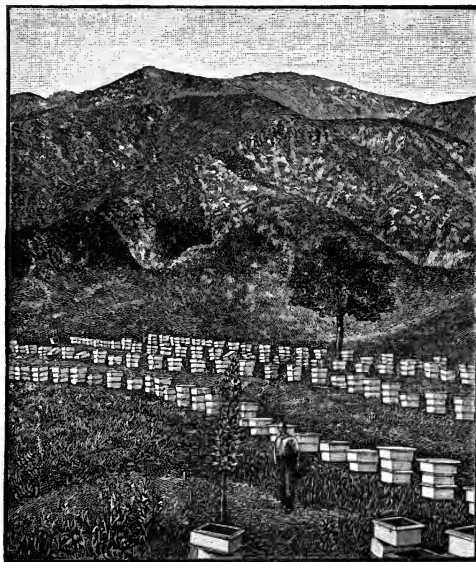
Visalia, 248 miles from San Francisco, is a flourishing

town situated in the midst of a rich farming region. The leading occupations of the surrounding country are fruit culture, stock raising, wheat growing, and lumbering. The population in 1880 was 1,412. It is now (1890) estimated at 3,000.

Bakersfield, 314 miles from San Francisco, is situated in the midst of a fertile region of country, in which the principal industries are stock raising, dairying, and fruit growing, the principal fruits being grapes, prunes, apricots, almonds, and oranges. The rainfall is light, and the land is chiefly watered by irrigation from Kern River. It has a fine water power and considerable mineral resources. The population in 1880 was 1,500. It is now (1890) estimated at 3,000.

Los Angeles, 482 miles from San Francisco, was first settled more than one hundred years ago by a few Spanish families from the Mission of San Gabriel, a few miles distant. The city is built on a gentle slope of the Sierra Madre Mountains, about 350 feet above the sea, and midway between the sea and the mountains, being about fourteen miles distant from each. The Los Angeles River flows south through the city, dividing it nearly in the center. The climate of Los Angeles is famed for its agreeableness. In summer the cool breezes from the Pacific Ocean relieve it from excessive heat, and in winter the surrounding mountains protect the city from the cold winds of the north. Orchards of the orange, lemon, lime, banana, pomegranate, and all kinds of deciduous fruit trees are found in the suburbs. Thousands of orange trees and grapevines are scattered through the city, and flowers bloom here all the year round. The chief exports are dried and fresh fruits, wool, and hides. During the orange season seventy-five cars loaded with oranges often leave the city in one day. Many lines of railway diverge from Los Angeles, making it the central commercial point for Southern California and much of Arizona and New Mexico. Its nearest seaport is San Pedro, twenty-five miles distant. The city has several cable systems of street railroad, one electric railway, and more than fifty miles of horse-car road. It is the seat, also, of one of the State Normal Schools. Since 1884 the varied advantages of Los Angeles have attracted a large immigration of people, chiefly from the Eastern States. Most of its handsome public buildings, business blocks, and private residences have been erected, and its many miles of street railway constructed, since that time. The population in 1880 was 11,000. It is now (1890) estimated at 60,000.

Pasadena, 492 miles from San Francisco, is a flourishing town of Los Angeles County, situated about seven miles from the city of Los Angeles. It is connected with Los Angeles by a line of street cars and two lines



BEE FARM NEAR SAN DIEGO.

of railroad. Though laid out since 1880, it has grown into a well built and beautiful town. The country about Pasadena, as well as generally through Los Angeles County, is rich, highly improved, and well watered by

irrigation. The population of Pasadena is now (1890) estimated at 7,000.

San Bernardino, 542 miles from San Francisco, has a beautiful situation on a high plain, which slopes gently toward the southwest at the foot of the San Bernardino Mountains. It is one of the oldest towns in the state. Gardens, orchards, and vineyards surround the town, which is, also, the center of a considerable mining region. Its trade in wine, wool, and barley is considerable. The population in 1880 was 1,600. It is now (1890) estimated at 7,000.

Riverside, 554 miles from San Francisco, is an important town of San Bernardino County, about twelve miles south of San Bernardino, and was founded in 1870. The country about Riverside is particularly adapted to the cultivation of the orange, and Riverside oranges are widely known. Figs, grapes, and other semi-tropical fruits also flourish here. As in most California towns, much interest is taken in the public schools. The population in 1880 was about 500. It is now (1890) estimated at 6,000.

San Diego, 608 miles from San Francisco, is the most important town on the seacoast south of San Francisco. It is situated on San Diego Bay, which furnishes an excellent harbor. It is an old city, having been founded in 1835, and within the last few years has had a rapid growth. It is a favorite resort for invalids, and its hotels furnish attractive quarters for tourists. The great honey producing region of the state is in the vicinity of San Diego. Productive mines of gold and silver have been recently opened in the county. The population in 1880 was 2,700. It is now (1890) estimated at 20,000.

BRITISH AMERICA.

QUESTIONS ON THE MAP.

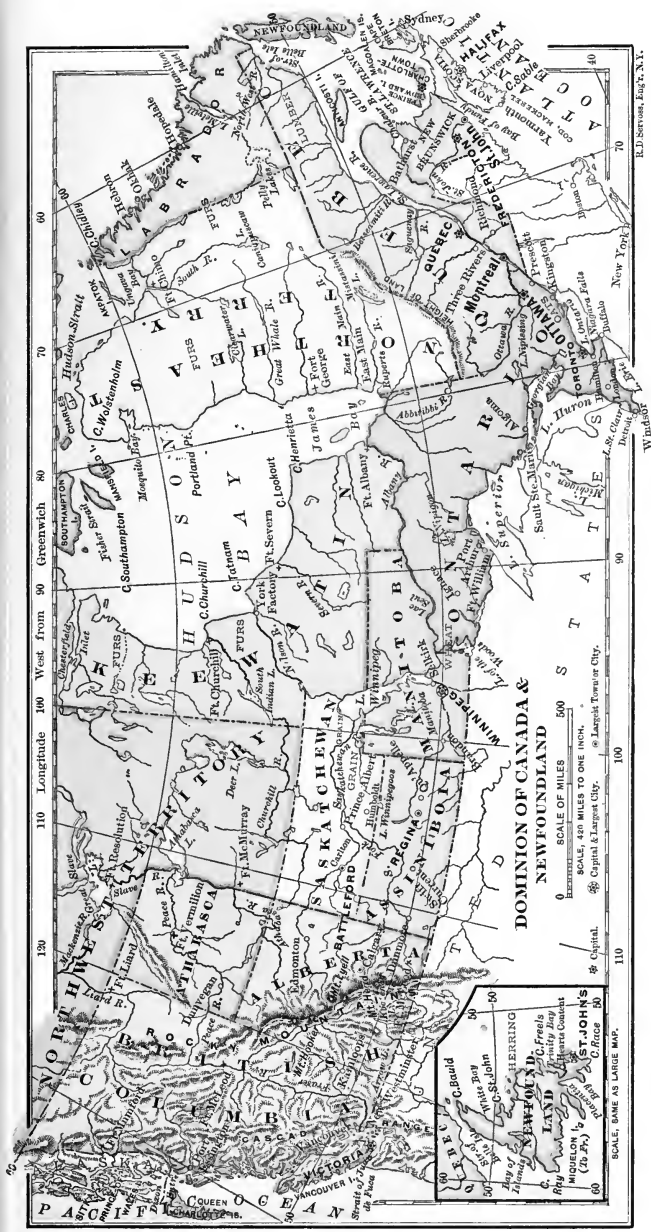
[Questions in italics to be answered from the open map.]

1. POSITION AND EXTENT.—In what part of North America is the Dominion of Canada? Between what ocean north and what country south does it lie? What ocean east? What ocean and land west? *Name all the waters that form part of the southern boundary of the Dominion of Canada.* What part of the St. Lawrence lies wholly in the Dominion of Canada—the upper part or lower part?

2. MOUNTAINS.—What mountain system of the United

States is found also in the Dominion of Canada? In what part of the Dominion? In what direction does it extend?

3. SLOPES AND RIVERS.—*In traveling from Lake Nipigon to Toronto by land would you go mostly up hill or down? Why do you think so? In traveling by land from Toronto to Quebec would you go mostly up hill or down? Why do you think so? How many river valleys lie between the St. Lawrence and the Height of Land? Of what large river valley, or basin, do all these form a part? In going from the St. Lawrence River along any of these valleys toward the Height*



of Land would you go mostly up hill or down? Why do you think so? In what direction, then, do these four river valleys slope? Would you find the valley of the Saguenay (Sag a nā) lower or higher than the valley of the Ottawa? Why? In going from the Height of Land towards Hudson Bay and the Arctic Ocean would you go mostly up hill or down? Why do you think so?

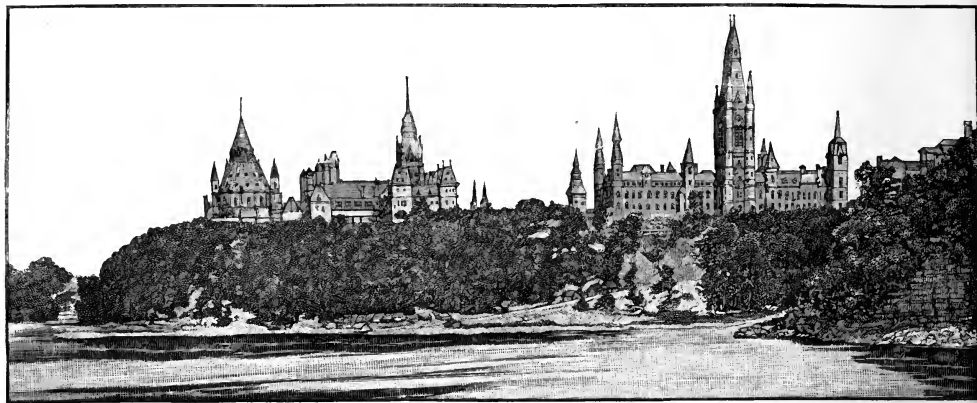
4. INLAND WATERS.—Name four large lakes lying nearly in a line northwest from Lake Superior. Name two bodies of salt water nearly surrounded by the land of British America.

5. [For answers to these questions see Map of North America.] In what zones is the Dominion of Canada? In what part of these zones? Would you go up or down the St. Lawrence for a warmer climate? Up or down the Mackenzie?

6. PROVINCES AND TOWNS.—Bound the following provinces of British America: Nova Scotia, Prince Edward's Island, Newfoundland, New Brunswick, Quebec, Ontario, British Columbia. Through which of these provinces does the St. Lawrence River flow? Which of these provinces is the most southeasterly coast province? What Natural Division of land is it? In what direction from it is Newfoundland? What island forms the southwest part of British Columbia? Locate the towns named below by the following Model:

Model:
Fredericktown is located in the province of New Brunswick, in the southeast part, on the St. Johns River.

Halifax; St. Johns; Quebec; Montreal; Ottawa; Toronto; Victoria.



GOVERNMENT BUILDINGS AT OTTAWA.

DESCRIPTION.

For Reading:

If you should travel northward beyond our own country you would enter the **Dominion of Canada**. Here, along the Great Lakes and the upper part of the valley of the St. Lawrence, may be seen populous cities, well cultivated farms, and thrifty farmers. Nearly all varieties of grain and vegetables and many excellent fruits thrive here.

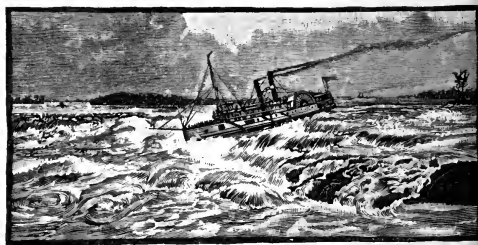
Schools and colleges flourish in this part of the Dominion, especially in the province of Ontario.

Away to the southeast of the Dominion, in the valley of the lower St. Lawrence and along the shores of the Atlantic Ocean, a hardy and industrious people are chiefly engaged in lumbering.

Still further to the southeast, in the province of Nova Scotia, mines of coal and iron give employment to large numbers of the inhabitants and add much to the wealth of the people.

The Great Lakes, which lie on the southern boundary of the Dominion, together with the St. Lawrence River, give to Canada fine natural advantages for commerce with other countries. The largest ocean steamers ascend the river to

Montreal. Above this city are swift rapids, so that steamboats are compelled to go through a canal on their trips up the river. On their down trips they "run" the rapids—an exciting and sometimes perilous adventure. In addition to these natural advantages the Canadians have built a system of railroads reaching from Halifax, in Nova Scotia, to the Pacific Ocean. Canada is thus a country of great commercial importance.



"RUNNING" THE LACHINE RAPIDS.

As you go northward beyond the Height of Land and enter the Arctic Plain the climate grows severely cold, and the farmer rapidly gives way to the hunter and trapper. For more than 200 years these hardy and adventurous people have roamed

over that part of British America lying between the Rocky Mountains and Hudson Bay, tempted by the rich furs of the otter, mink, beaver, and other animals that, in cold countries, contribute so much to the comfort of mankind.



FUR TRADER'S HOUSE.

West of the Rocky Mountains, in the province of British Columbia, there are extensive coal fields and rich gold mines. They are found on and near Vancouver Island, in the southwest corner of the province. Nearly the entire population of the province is found in this part of it. The attractive city of Victoria is its capital.

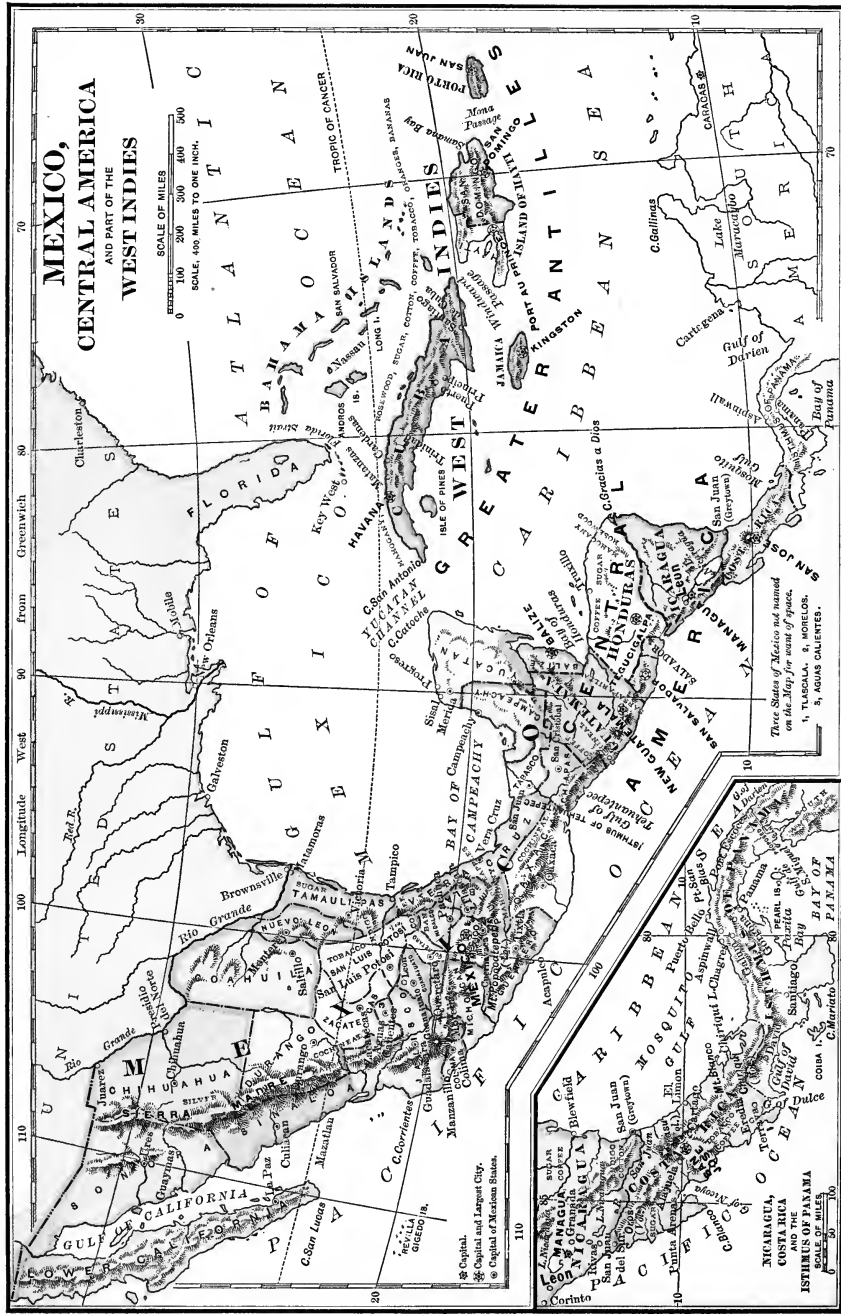
Montreal is the largest and wealthiest city of the Dominion. Toronto ranks second in size and wealth. Quebec is the oldest city, and has a history of greater interest than that of any other.

The provinces of the Dominion of Canada are united under a government of their own, but all belong to Great Britain. The chief ruler is called a Governor-General, and is appointed by the Crown of Great Britain. Ottawa, in the province of Ontario, is the capital of the United Provinces of the Dominion. The buildings erected here for the Canadian parliament are the finest in North America. The government is in many respects like that of the United States.

Just northeast of Nova Scotia lies the province of Newfoundland. This is also a British province, though not belonging to the Dominion of Canada. The waters of the surrounding sea are the chief source of wealth to the people of this island. Upon these waters may be seen the white sails of hundreds of fishing vessels engaged in catching herring, which are taken in immense quantities.

For Recitation:

1. Where are the cities, farms, schools, and colleges of Canada chiefly found?
2. What grows abundantly in the valley of the lower St. Lawrence and on the Atlantic coast? Why do you think so?
3. Where are mines of coal and iron found?
4. The commerce of Canada is important, and is carried on by means of the St. Lawrence River and the Great Lakes, and by a system of railroads that reaches from the Atlantic Ocean to the Pacific.
5. North of the Height of Land the climate is extremely cold, and the occupation of the people is chiefly hunting and trapping.
6. British Columbia is rich in coal and gold. The mines are on or near Vancouver Island, in the southwest part.
7. Give the chief distinction of Montreal, Toronto, Quebec, Ottawa.
8. The provinces of British America, except Newfoundland, are united under one government, called the Dominion of Canada. The chief officer is a Governor-General, appointed by the Crown of Great Britain. What is meant by the "Crown" of Great Britain?
9. Newfoundland is a British province, but does not belong to the Dominion of Canada. It depends for its wealth mainly upon its herring fisheries.



QUESTIONS ON THE MAP.

[Questions in italics to be answered from the open map.]

POSITION AND EXTENT.—In what part of North America are Mexico and the Central American states? *Begin on the north, pass east, and name the*

bodies of land and water that surround Mexico. In what general direction does Mexico lie? Measure the map from the northwest corner of Mexico to Guatemala (güatemala), and find the extent from northwest to south-east. Measure from Matamoros to Cape Corrientes, and find the extent. What joins Central America to South America? What waters wash the

shores of Central America? What waters surround the West Indies?

MOUNTAINS.—Name the mountains running through Mexico and Central America. Of what mountain system are they an extension? [See Map of North America.]

CLIMATE.—In what zones is Mexico? In what part of these zones? In what zone are its principal cities? In what zone are the Central American states? Would you think it warmer near the coast or in the mountains? Why?

STATES AND CITIES.—What is the capital of Mexico? In what part of the country? Where is the city of Vera Cruz (*vā'rā kroos*)? On what waters would you sail, and in what direction from New Orleans to Vera Cruz? Beginning with Guatemala, write, in a column, the names of the Central American states. In another column, opposite each, write its capital. Do the same with the four largest islands of the West Indies.

PRONUNCIATIONS.—Cō's'ta Rī'ca; Hon dū'tas; Mā'dre; Ma nā'gua; Nic ar ā'guā; Po po cā tā pētl'; Rī'o Grān'de; Yu cā tăn'.

MEXICO AND CENTRAL AMERICA.

For Reading:

Let us sail from New Orleans and enter Mexico at Vera Cruz. This is its principal seaport. It is a strange looking city. Yellow domes and steeples, with patches of green, pink, scarlet, and blue upon them, first attract our attention. Most of the houses have flat roofs, and are painted white or yellow, and grass grows in the cracks of the pavements.

Along this eastern coast of Mexico the land, for sixty or seventy miles back, is low, and the climate, as we should expect to find it in the Torrid Zone, is hot. As we travel up and down this narrow strip we find the half naked people engaged in the cultivation of sugar cane, cotton, coffee, indigo, bananas, oranges, and pineapples.

Going west across this narrow strip, so low and hot, we enter the interior of the country by climbing the mountain side to the height of a mile and a half above the level of the sea. If we start from Vera Cruz we go in railroad cars, but from other points on the coast our way will be by mule paths. At this height we find a great plain, or table-land,¹ stretching out before us, which oc-

cupies nearly all of Mexico, and here we find most of its population.

Here, although still in the Torrid Zone, the climate becomes temperate and agreeable. The reason for this you have already learned. Here we shall see great fields of corn and other products of the Temperate Zone, and laborers, in white cotton, plowing with wooden plows such as were used by the Egyptians thousands of years ago.

A strange bug is one of the important productions of this region. These bugs feed on a cactus plant, and finally become so numerous as to cover the leaves. The Mexicans then brush them off into bags, kill them in hot water, dry them, grind them, and the powder is the beautiful cochineal that we buy at the drug stores for dyeing.

In the southern part of this great plain is the beautiful City of Mexico, the capital of the country. Gardens and orange groves surround it and, outside of these, charming lakes sparkle in the sun, and still further off lofty mountains rise, with snowy tops.

Going west from the City of Mexico, across this plateau, with great mountains rising all around us, we gradually descend again to a low, narrow plain which skirts the Pacific Ocean.

¹ Reading Hour: *Mexico and Her Lost Provinces*, p. 32, Mexican Plateau Products and Laborers; p. 175, Climbing Popocatepetl.

The mountain regions of Mexico contain many volcanoes, of which Popocatepetl is the most famous. Among the mountains rich mines of gold and silver have been worked for hundreds of years.

The country of Mexico is a Republic, of twenty-seven states.

The people are mostly descendants of the early Spanish settlers, with some native Indians, and a mixture of the two, called *Mestizos*.



CATHEDRAL.

Central America consists of small states, unimportant and often at war with each other, lying between Mexico and the Isthmus

of Panama. In character the people much resemble the Mexicans. Most of the work is done by the Indians and *Mestizos* under the direction of an overseer, who would lose caste were he, himself, to do even so much as to carry a letter to the post office.



SQUARE OF SANTA DOMINGO.

2. The climate of the eastern strip is hot and moist, of the plateau region temperate and agreeable.

3. Sugar cane, cotton, coffee, indigo, bananas, oranges, and pineapples flourish on the low, hot plain of the east, while the usual productions of the Temperate Zone are found on the plateau.

4. The cochineal bug is found on the Mexican plateau in such quantities as to be a leading article of commerce.

5. The capital of Mexico is a beautiful city, surrounded by orange groves, gardens, lakes, and mountains.

6. The mountain regions of Mexico contain many volcanoes, and are famous for their mines of gold and silver.

7. The government of Mexico is republican. The people are mainly of Spanish descent, with some Indians and *Mestizos*.



NATIONAL PALACE.

For Recitation:

1. The country of Mexico consists of a strip of low land along the Atlantic coast, a great body of very high land all through the center from north to south, and a very narrow strip of low land along the Pacific.

8. Central America consists of a few small and unimportant states. What is the character of the people, and how is the work done? What kind of coffee is named for a state of Central America?

SOUTH AMERICA.

[Before taking the reading lessons let the map on the next page be carefully studied.]

I. NATURAL DIVISIONS AND ANDES REGION.

For Reading:

South America consists of the Andes Mountain region on the west and a vast plain, with here and there a short, low mountain range, sloping eastward to the Atlantic Ocean. This plain consists chiefly of the *Amazon*, *Orinoco*, and *La Plata* valleys.

Start on the map at the southern end of the Andes Mountains and trace them northward. Until you reach the northern part of Chili you find them narrow, consisting of only a single chain. Then they begin to spread out into a number of chains, that run through Bolivia and Peru, and have great table-lands between them.

In Ecuador they all come together again and make a line of high volcanoes, the famous Cotopaxi being the highest.

Once more they divide into ranges, one of which runs on through the Isthmus of Panama, and the other to the Gulf of Venezuela.

These mountains are the second highest in the world, and are very steep. Sharp ridges and lofty peaks frequently project from the table-lands, and between these are chasms of frightful depth.

The only roads¹ are narrow paths, and the chasms are crossed by rope bridges. A single misstep on one of these dangerous paths would send the traveler down the precipice.

Where animals can be used, they are mules and llamas, the latter being among the native animals of this region. Often, however, travelers must be carried in chairs strapped to the backs of native Indians.

Like the western mountains of North America, the Andes contain large quantities of gold and silver and other valuable minerals.

The climate of the countries bordering on the Pacific Ocean is what the Andes Mountains make it. Though much of the country lies in the very center of the Torrid Zone, the climate is cool and agreeable, except in some places at the foot of the mountains, where it is hot and moist, as in the low lands of Mexico.

But little rain falls anywhere except northward from Peru.¹ Do you wonder what the mountains have to do with the rainfall? The winds of this region are all from the east, and the mountains south of Ecuador are so high that the clouds, loaded with rain, cannot get across; nevertheless, a fog that rises from the Pacific carries considerable moisture over the narrow strip of land at the western foot of the Andes, and this gives great fertility to its soil.

For Recitation:

1. Copy and learn the first paragraph.
2. Of what do the Andes Mountains consist in the southern part of South America? Describe them in Bolivia and Peru. In Ecuador. North of Ecuador.
3. Describe the mountain roads. How is travel on them conducted?
4. What of minerals in the Andes?
5. Upon what does the climate of the Pacific countries depend? How do the mountains affect the rainfall in the countries south of Peru? How do these countries get their moisture?

¹ Reading Hour: *World by the Fireside*, p. 142, Crossing the Andes. *Our World Reader*, p. 65, Travel in the Andes.

¹ Reading Hour: *On the Amazons* (Camping Out Series), p. 21, Why Peru is really an Atlantic state.

QUESTIONS ON THE MAP.

[Questions in italics to be answered from the open map.]

POSITION AND EXTENT.—In which hemisphere is South America? How are North America and South America joined? If we sail from Aspinwall around South America to Panama, what ocean would we leave in passing around Cape Horn? What ocean would we enter? What bay would we enter at the end of our voyage? How many miles does an inch of this map stand for? *Measure the distance from Cape Gallinas to Cape Horn. What is the distance on the map? How many miles of country is that? Measure the distance from Cape St Roque to Cape Blanco. What is the distance on the map? How many miles of country is that?* How long, then, is South America from north to south? How long from east to west?

MOUNTAINS.—What is a mountain system? What is a mountain chain? Where do you find the great mountain system of South America? What is its name? Where do you find other mountains in South America?

SLOPES, RIVERS, AND RIVER VALLEYS.—What is a river system? What is a river valley, or basin? How can you tell on the map which way a valley slopes? On which side of the Andes Mountains do the great rivers of South America rise? To what ocean do they find their way?

Describe the Amazon River. (See model, p. 34.) On which side of the Amazon are its tributaries longest? What reason do you see for this? What is the region drained by the Amazon and its tributaries called? In what direction does the valley of the Amazon slope? In what direction do the valleys of its southern tributaries slope? With your pencil trace a line around the valley of the Amazon. In the large valley of the Amazon find six smaller river valleys, and write their names. Point out and give the direction of ten slopes in the valley of the Amazon. Is the mouth of the Japura (hapoo'ra) River in the upper or lower part of the val-

ley? Why do you think so? Is the mouth of the Xinju (shing'goo) in the upper or lower part of the valley? Why do you think so? Which is higher, the mouth of the Orinoco, or the mouth of the Amazon? In going from Mana'us to Obi'dos, would you go up hill or down?

Describe the Orinoco River. What country does the river drain? On which side of the Equator is the Orinoco Valley. Trace a line around the valley of the Orinoco. What are the principal tributaries of the La Plá'ta? Near what parallel of latitude does the valley begin? In which direction does it slope? Trace a line around the valley of the La Plata.

CLIMATE.—In what zones is South America? In what zone is the larger part of it? In what zone is the valley of the Amazon? Of the La Plata?

COUNTRIES AND TOWNS.—What countries lie mainly in the Andes System? What large country lies mostly in the valley of the Amazon? What countries are found chiefly in the valley of the La Plata? Beginning at the north, write in a column the names of all countries bordering the Pacific Ocean, and opposite each, in another column, the name of its capital. Do the same with the countries bordering the Atlantic Ocean. The same with the countries that have no seacoast. *Read from the map the boundaries of all the countries whose names you have written. In sailing around South America from Aspinwall to Panama, what important seaports should we pass on the Atlantic Ocean? What on the Pacific? What is usually the chief occupation of people in large seaport towns?*

THOUGHT QUESTIONS.—In the valley of the Amazon would you expect to find the vegetation large and strong, or thin and weak? Why? The wild animals harmless, or fierce and dangerous? Why? In what part of river valleys would you expect to find the land most fertile?

PRONUNCIATIONS.—Ar'gen tine; Bahía (bā'ē ā) Bō gō tā'; Bra zil'; Buenos Ayres (bō'nus ā'riz); Cál lá o; Cā rā'cas; Cā yenne'; Chl i; Ec ua dōr'; Guayaquil (gwī a keel'); Guí(ghē)ā'na; Lí'ma; Mon te víd' e o; Par a mar i bo; Qui(kē)to; Rí'o Ja néi(nēro); Sān tí ā'go; Vāl pa ráv(rí)so; Ven ez ue (we)lā; Uruguay (oo roo gū'i).

II. THE VALLEY OF THE AMAZON.

For Reading:

Travelers have always been much interested in the Valley of the Amazon.¹ For one thing, it is the largest river valley in the world. The great river itself rises within sight of the Pacific

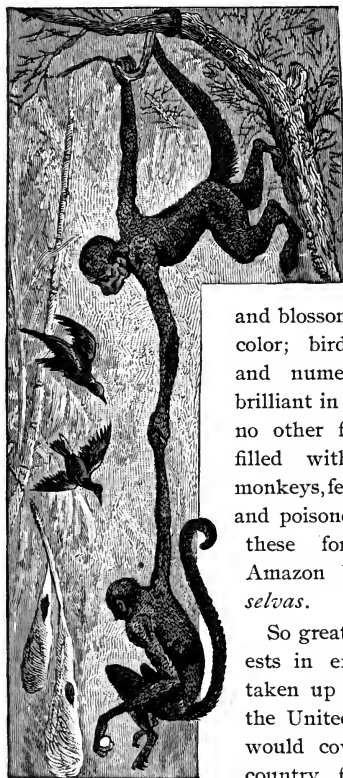
Ocean, flows across the whole width of the Grand Division, and finally empties into the Atlantic Ocean more water than runs from any other river in the world. The rivers, also, that flow

¹ Reading Hour; *Brazil, Amazons*, by Smith; p. 2, Water of the Amazon; p. 4, Moisture; pp. 82-86, Rubber gathering; pp. 140-144, United States settlers in the Valley of the Amazon.

On the Amazons (Camping Out Series), p. 22, Gales on the river; pp. 19, 20, Scenery along the Amazon; p. 163, Cannibal Indians.

Afloat in the Forest, p. 123, Monkeys.

into the Amazon are long, and drain very large regions of country.



MONKEYS STEALING EGGS.

For another thing, no other river valley in the world has forests so thick and vast; climbing and flowering plants, with foliage

and blossoms so bright in color; birds so strange and numerous and so brilliant in plumage; and no other forests are so filled with chattering monkeys, ferocious beasts, and poisonous reptiles as these forests of the Amazon Valley, called *selvas*.

So great are these forests in extent that if taken up and placed in the United States they would cover the whole country from the Atlantic Ocean nearly to the Rocky Mountains.

Let us enter the valley through the mouth of the Amazon. We shall sail up a stream that spreads out over its low banks into marshes and side channels many miles in width; along by the rubber trees, with their white trunks and shining green leaves; through great orchards of ca cá'o trees, from whose fruit chocolate is made, and in sight of the great mahoganies, forty feet high and four or five feet in diameter, that stand on the

higher land back from the river. Through all this region no day in the year is without rain, and in the upper part of the valley the air is so damp that a gun kept loaded over night can not be fired off.

For Recitation:

II. 1. The Amazon is the largest river valley in the world.

2. More water flows through the Amazon River than through any other.

3. Vast forests, called *selvas*, cover a large part of the valley.

4. In the lower part of the valley the river is many miles wide, containing multitudes of low islands.

5. India rubber trees and cacao trees are found in great numbers on the banks. Mahogany trees grow further back from the river.

6. **THOUGHT QUESTIONS.**—Would you think the air that blows into this valley from the sea a moist or a dry air? Why? A warm or a cool air? Why? As it goes on up the mountains does it become cooler or warmer? Why? If it becomes cooler what is the effect upon the moisture? Then, in what part of the valley, the upper or lower, would you expect to find the greater rainfall?

III. VALLEYS OF THE ORINOCO AND LA PLATA.

For Reading:

If you do not remember where the **Valley of the Orinoco** is, look once more at the map. You will see that, like the valley of the Amazon, it slopes to the east.

It is separated from the Amazon Valley only by the low Pá rí'me (mä) Mountains. Indeed, in the western part of the valley, toward the source of the Orinoco River, it is not separated at all, the water at some seasons flowing from the Orinoco into the Amazon, and at others from the Amazon

into the Orinoco, through a river that connects them.

In *Vegetation* and *Climate* this valley differs from the Amazon. Its plains, instead of being covered with forests, are grassy, and are called *llanos* (llä'nos).¹ Instead of daily rains there is a wet season and a dry season. In the wet season the grass is green and luxuriant; in the dry season the earth becomes hard and baked.

South of the valley of the Amazon you have found the **Valley of the La Plata**.² This valley, you will see from the direction of its rivers, slopes to the south. Only a slight elevation of land separates it from the Amazon Valley, so that the Orinoco, Amazon, and La Plata Valleys are really one great plain reaching from the Andes to the Atlantic, except where the scattered ranges of mountains in eastern Brazil rise from them.

The *Seasons* in this southern valley are two—a wet and a dry; dry when it is wet in California, and wet when it is dry here. The plains of this valley are covered with a coarse grass called *pampas* (päm'pas).

For Recitation:

III. 1. Direction of the Orinoco Valley from the Amazon Valley.

2. Direction of its slope.

3. How separated from the Amazon Valley; how united with it.

4. Vegetation—climate.

5. Direction of the valley of the La Plata from that of the Amazon.

6. Direction of its slope.

7. Separation from the Amazon Valley.

8. Union of the three valleys.

¹ Reading Hour: *World by the Fireside*, p. 114, Electric Eel of the llanos; p. 137, Stories of the llanos.

Our World Reader, p. 82.

² *Our World Reader*, p. 85.

9. Seasons of the La Plata Valley.

10. Vegetation.

IV. THE COUNTRIES OF THE ANDES.

The countries of South America may be divided into the Countries of the Andes and the Countries of the Plains. The Countries of the Andes are those that border on the Pacific Ocean, including, also, Bolivia. You will notice that the eastern part of Bolivia and Peru lies also in the valley of the Amazon, and that the eastern part of the United States of Colombia is drained by both the Amazon and the Orinoco.

Though these countries contain many rich mines of gold, silver, and copper, which have been worked for hundreds of years, the principal occupation of their people is agriculture, and the grains and vegetables and other products of the Temperate Zone are raised here.

All the quinine¹ in the world comes from the bark of a tree in Bolivia and Peru, and nearly all the guano (gwä'no), a valuable manure much used in Europe and the United States, is taken from the shores and islands of Peru. The dress goods that we call al pác'a are made from the wool, or hair, of the alpaca, a species of llama found only in Peru.

The exports of this region are sent to market mostly from the seaports of Guayaquil, Callao, and Valparaiso.

For Recitation:

IV. 1. Groups of countries—how many? What?

2. Situation of the Countries of the Andes.

3. Mines of these countries.

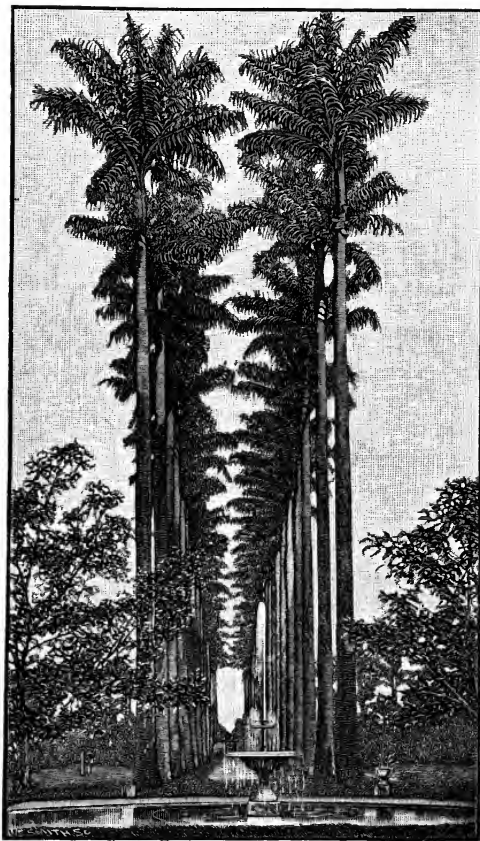
4. Principal occupation and products. Why

¹ Reading Hour: *World by the Fireside*, p. 121, A Quinine story.

do we find products of the Temperate Zone in the Torrid Zone?

5. Quinine. 6. Guano. 7. Alpaca.
8. Seaports.

V. THE COUNTRIES OF THE PLAINS.



AVENUE OF PALMS, RIO JANEIRO.

For Reading:

The six Countries of the Plains, with the exception of Venezuela, are those that lie wholly

east of the Andes Mountains. Except the traders and merchants, their inhabitants are almost wholly engaged in agriculture and stock raising. The common productions [See page 102.]

ANIMALS OF SOUTH AMERICA.

For Reading Only:

Though The Llama belongs to the camel family, it has no hump and is small. The hair is very woolly, so that a llama looks much more like a long-legged, long-necked sheep than like a camel. It is used as a beast of burden in the Andes, and can carry one hundred pounds fourteen or fifteen miles a day. The alpaca is a species of llama.—The Armadillo is so named from its covering of bony scales, which it presents to an assailant by rolling itself into the shape of a ball, with its armor outside. It is a night prowler, sleeping in the day time. Its legs are very short and strong, and it has been seen running easily about with three monkeys seated upon its mail-clad back.—The Tapir moves mostly at night, feeding on young branches, fruit, and melons. Its hide is thick and tough, and not easily injured by the branches of trees among which it pushes. Its great enemy is the jaguar. When this terrible animal has fastened itself upon the tapir's back, the poor creature's only defense is a rush through the thick brushwood, which frequently dislodges his foe. If this fails, and the tapir can reach the bank of a river or pond, he plunges in and the jaguar is obliged to let go to escape drowning.—The Ant-eater is a curious creature, sleeping by day and prowling by night. It lives on trees, and feeds upon insects found in the bark. These it gathers with its tongue, which, when protruded, looks like a great, red earth-worm, and coils and twists itself about as if it were some separate thing alive.—The Jaguar is a beast of the cat family, much resembling the leopard, and is noted for its ferocity and strength. It has been known to kill a horse, drag it sixty yards to a river, swim the river with it, and drag it up the bank on the opposite side and into the wood. It feeds on a variety of animals and birds, but its favorite food is the flesh of the monkey and peccary. Its fur is fine and beautifully spotted.—The Boa Constrictor is a magnificent reptile, formerly held sacred and worshipped with divine honors. It is often more than twenty feet in length, and kills its prey by winding itself around it, squeezing it to

Reading Hour: *Wood's Mammalia*, p. 709, The Llama; p. 767, The Armadillo; p. 743, The Tapir; p. 774, The Ant-eater; p. 172, The Jaguar.
Wood's Reptiles, p. 122, The Boa Constrictor; p. 5, The Tortoise; p. 75, The Iguana.
Wood's Birds, p. 13, The Condor; p. 507, The Toucan; p. 745, The Penguin.

death. The skin of the boa has a wonderful power of expansion, which enables the reptile to swallow animals much larger than itself. The skin is sometimes stretched so thin, when the creature is swallowing its prey, that the shape of its victim can be distinctly traced beneath it.—Unlike other reptiles, The Tortoise (tor'tis) is a creature with the skeleton outside and the soft parts inside. The backbone and ribs grow out together into large flat bones, which form the upper part of the shell of the tortoise, and are united like the bones of the head in man. The breast bone grows out in the same way, and forms the shell on the lower side of the creature. It closely resembles the common turtle. Its flesh and eggs, which are a little larger than pigeon's eggs, are excellent food.—The Iguana is a reptile of the lizard family, and is found only in the western hemisphere. It is covered with scales, and lives almost wholly in the branches of trees, although also quite at home in the water. Its flesh has a very delicate flavor, not unlike that of a spring chicken.—The Condor is the most distinguished of the birds of prey, being a very giant among them. From tip to tip of its wings it often measures eleven feet. It is seldom found below the line of perpetual snow in the Andes, and comes down only when driven by hunger. In strength, even when wounded, it is more than a match for a man. In flight the wings of the condor are never seen to flap after it is once up. With wings extended, it

sails for hours in the sea of air above the mountain tops, turning and wheeling by a simple motion of its head.—The Toucan belongs to the group of birds called *climbers*. The most extraordinary part of these birds is the enormous beak. They are very social in disposition, keeping up among themselves an incessant and noisy chattering.

Though without beauty of their own, they nevertheless have a great hatred of birds they deem uglier than themselves, and will often surround and mob them.—The Nandu is the American species of ostrich. (See description of ostrich in *Animals of Africa*.)—The Penguin belongs to the family of birds called *swimmers*. It lives by the seashore in great flocks of thirty thousand or forty thousand. The organization of this great army is very curious. The young birds are placed in one position, the moulting birds in another, the sitting hens in a third, and the clean, or moulted birds, in a fourth, and should a moulting bird come among the last named it is at once driven out. Except when in a hurry, the penguin walks erect, but when frightened, drops at once forward, using its wings as forelegs, and running with great swiftness.

Reading Hour: *Animal Memoirs, Part II.*, p. 11, The Giant Condor; p. 7, The Fish Hawk.



of the Torrid Zone—sugar, coffee, cotton—are found in Venezuela, Guiana, and Brazil. Nearly all the coffee used in the world comes from Brazil. Diamonds are found in her eastern mountains and are exported in large quantities. Hides from numberless herds, in both Brazil and Venezuela, are also sent abroad to market.

From Brazil,¹ also, comes nearly all the India rubber that we see in waterproofs, shoes, erasers, balls, bands, and other things. Along the banks of the Amazon the Indians, half-breeds, and poorer whites gather the creamy juice of the India rubber tree, which is a native of the forests. When gathered it is dried, hardened by fire into crude rubber, and sold to the traders and merchants of that country, who send it to the markets of the world.

Another large occupation along the Amazon banks is the cultivation of the cacao tree, and the shipping of its berries to foreign countries to manufacture into chocolate.

The Argentine Confederation produces mostly cattle and sheep, sending abroad hides, horns, and wool.

Paraguay and Uruguay are unimportant countries.

The leading seaport towns of the countries of the plains are Georgetown, Rio Janeiro, Montevideo, and Buenos Ayres, though there are others of some importance.

4. Coffee. 5. Diamonds. 6. Hides. 7. India rubber. 8. Cacao. 9. Seaports.

VI. PEOPLE—RELIGION—GOVERNMENT—EDUCATION.

For Reading:

The ruling **People** of South America, except in Guiana, are descendants of early Spanish and Portuguese settlers—of Portuguese settlers in Brazil and of Spanish settlers elsewhere. The Spanish and Portuguese languages prevail.

Great numbers of the native tribes still remain, however, and are employed in the rougher and more disagreeable occupations. Negroes are numerous in Brazil, many of them being held as slaves.

The Roman Catholic **Religion** prevails.

The countries of South America, except Guiana, are independent republics. Guiana consists of three European colonies—one Dutch, one French, and one English.

Of these countries, Chili and the Argentine Confederation are the most advanced in **Education** and commercial enterprise.

Brazil is the largest and most powerful country of South America, and has more trade with the United States than all the rest. One half of all its coffee crop is sold in this country.

For Recitation:

VI. 1. Nationality of the ruling people of South America. 2. Exception.

3. Portuguese—*where*. 4. Spanish—*where*. 5. Native tribes—employment. 6. Negroes—condition. 7. Religion. 8. Governments.

9. Education and commerce.

10. Commerce with the United States.

For Recitation:

V. 1. Situation of the Countries of the Plains.

2. Occupations of the people.

3. Products of the northern countries.

¹ Reading Hour: *World by the Fireside*, p. 113, India Rubber. *On the Amazons* (Camping Out Series), p. 24, Character of Brazilians; p. 38, Custard Apple; pp. 56, 57, 58, Rubber Tree Forests; p. 61, Smoking Rubber; p. 131, Ant-eaters.

Afloat in the Forest, p. 116, Brazil Nuts; p. 159, Vegetable Cow; p. 168, Ants; p. 185, Ant-eaters; p. 196, Fish Cow.

TOPICAL REVIEW OF SOUTH AMERICA.

Write, in your own language, all of the geography of South America that you know, using, as a guide, the following topics:

Position.	Mountain Systems.
Extent.	Drainage: (Slopes and rivers.)

Climate.	Occupations: (Farming, manufacturing, mining, commerce.)
People.	Animals.
Countries.	Cities and Towns: (Location, for what noted, etc.)
Products: (Mineral, vegetable, ani- mal.)	

EUROPE.

[Before taking the lessons, "For Reading," the map on the next page should be carefully studied.]

I. WHY WE ARE INTERESTED IN EUROPE.

For Reading:

The Grand Division of the Old World that has most in it to interest us is Europe. Perhaps you wonder why.

In the first place, we have more trade with Europe than with any other Grand Division. Nearly all of the wheat, corn, cotton, coal oil, beef, and other products that we export goes to Europe, and the fine goods for use or for ornament that we import come chiefly from Europe. Besides this, 30,000,000 of Europeans speak and write the same language that we do.

More Americans visit Europe than any other Grand Division. At some seasons of the year you may find more Americans visiting in a single city of Europe than there are people in some of our states.

More Europeans come to settle here among us than any other people. All the Irish, Germans,¹ French, Spanish, Italian (ĭ täl'yan), English, and Scotch people that we know came from Europe.

But more than all the rest, this country was settled by Europeans, and all the white people

now in it either came from Europe, or are the descendants of those who did. So you see we have good reason to feel interested in Europe.

For Recitation:

I. 1. Europe interests us more than any other Grand Division, because we have more trade with it, and because so many people of Europe speak our language. How many?

2. More Americans visit Europe than visit any other Grand Division, and more Europeans than any other people settle in the United States.

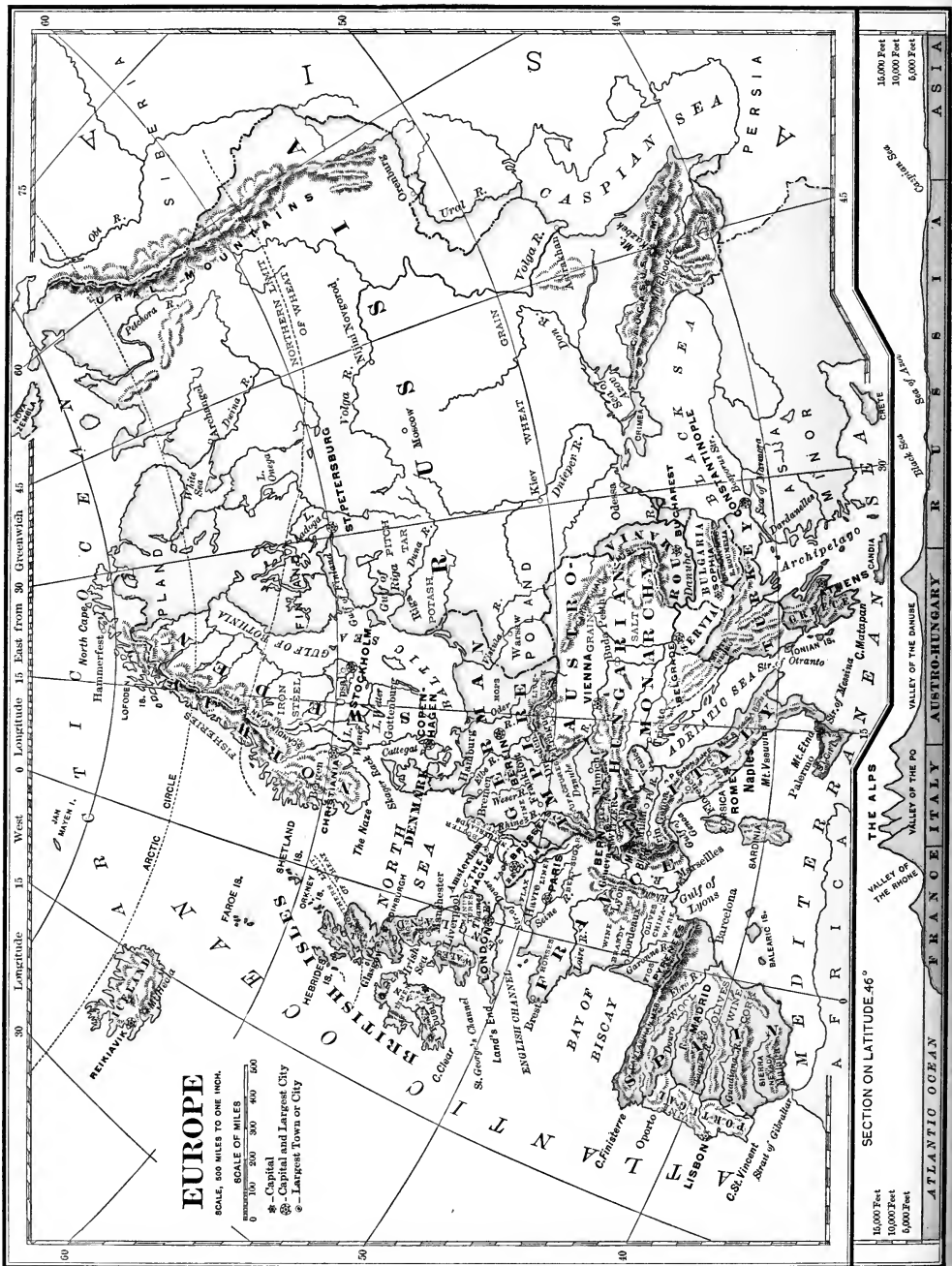
3. The most important reason for our interest in Europe is that this country was first settled by Europeans, and is now governed by their descendants.

II. COAST LINE—MOUNTAINS—GLACIERS.

For Reading:

In your study of the map of Europe you saw that the water of the sea cuts into the land, making numerous bays and gulfs and leaving many peninsulas, thus giving greater advantages

¹ Reading Hour: *Seven Little Sisters*, p. 104, Louise, the Child of the Western Forest.



EUROPE

SCALE, 500 MILES TO ONE INCH.

SCALE OF MILES
0 100 200 300 400 500

- * Capital
- Largest Town or City
- - Largest Town or City

SECTION ON LATITUDE 46°

15,000 Feet
10,000 Feet
5,000 Feet

ATLANTIC OCEAN FRANCE ITALY AUSTRO-HUNGARY RUSSIA ASIA

Continued, Page 7, K. 1.

QUESTIONS ON THE MAP.

[Questions in italics to be answered from the open map.]

POSITION, EXTENT, AND FORM.—In what hemisphere is Europe? In what part of the hemisphere? In what direction from the United States? How reached from New York? From San Francisco? In sailing from Hammerfest, at the north of Norway, to Odessa in southern Russia, on what oceans and through what straits and seas must you sail? *If you were to sail so as to touch all seaport towns that you find on the map, on what waters would you sail?* What Grand Division east of Europe?

How many miles on this map does an inch represent? *Apply your ruler and tell how many inches it is from Cape St. Vincent to the extreme northeast of Russia. From the most northerly point of Norway to the most southerly point of Greece.* What, then, is the length of Europe, in miles, from northeast to southwest? From north to south?

What is a coast line? Is the coast line of Europe smooth or irregular? What occupation does such a coast line favor?

MOUNTAINS.—What is a mountain system? A mountain chain? In Europe do the mountain systems generally run east and west, or north and south? In what part of Europe are the chief mountain systems? Are the ranges longer or shorter than those of South America? In what part of Europe is the country least mountainous? *Describe the position of the Cantabrian Mountains. The Pyrenees Mountains. The Alps. The Apennines. The Carpathian Mountains. The Caucasian Mountains. The Ural Mountains. The Scandinavian Mountains.*

SLOPES AND RIVERS.—How do you tell on the map which way the land slopes? *How many general land slopes do you see in France? In what direction does each lie? Name the rivers that drain each slope. What is*

the general direction of the slope in Germany? How do you tell? What are the principal rivers of this slope? In what general direction do the Austrian plains slope? Which is the largest river of these plains? What three important rivers have their source near together in the Swiss Alps? In what direction does each flow? In what general direction does the south half of Russia (russia) slope? The north half? Name the largest three rivers of southern Russia, and the waters that receive each of them.

CLIMATE.—In what zones does Europe lie? How do you tell?

COUNTRIES.—Bound the countries of Europe and name their capitals.

THOUGHT QUESTIONS.—*Point out the countries that you think are warm.* How do the mountains that extend east and west across Europe affect the climate of the countries that lie south of them? Is the Mediterranean a warm or a cold sea? Why? *What do you see on the map that helps you to tell anything of the climate?* Would you think the winter climate of Great Britain warmer or colder than that of Moscow? Why? The summer climate? Why? In what climate do oats, wheat, corn, and other food grains grow best? In what part of Europe would you expect to find these? In what climate grapes, oranges, olives, figs, and lemons? In what part of Europe would you expect to find these?

Is Europe likely to have many or few good harbors? Why? Many or few important seaports? Why? What are likely to be the chief occupations of people in seaport towns?

PRONUNCIATIONS.—Bal/(baw)l'ic; Bel grā'de'; Ber l'in; Bērn; Bōs/po rus; Bu cha/(ko)rest'; Cāt'te gat; Chris ti ā'n'i(ne)ā; Dar da nelles/(ne)ā; Edin'burgh (ed'in būr ruh); Loire (lwar); Ma drid'; Rā'ine; Rā'ne; Seine (sane); Sophia (so fē ā); Skāg'er Rack; The Hague (hāg); Vīē'nā.

for commerce to this Grand Division than to any other.

You saw that the chief mountain systems run east and west, through the countries nearest the Mediterranean, and that to the north of these the country is mostly a vast plain.

You saw, also, that the three most important rivers of Europe, the Rhine, the Rhone, and the Danube, though flowing in different directions, have their sources near together in the Alps of Switzerland; indeed, so near are they that they can all be seen from the same point.

The Alps, though not the highest mountains in the world, are the most celebrated. They attract more visitors than all others, and travelers have written many thrilling accounts of their adventures among the lakes, snows, and glaciers (glā' seer) of these mountains.

The glaciers¹ are vast masses of ice which move slowly along between the facing sides of mountains. They are sometimes called *ice rivers*, although they never move more than 240 feet in a year, and usually much slower. As the glacier

¹ Reading Hour: *World at Home*, vol. V., p. 49, Glaciers.

passes through the mountain range to a lower level the ice melts slowly away, and forms a clear mountain stream bordered with green grass and flowers.



A GLACIER.

For Recitation:

II. 1. The water of the sea cuts into the land of Europe, making commerce with other countries easy.

2. The chief mountain systems of Europe run east and west, through the southern part. North of these mountains the country is mostly level.

3. The Alps are the most celebrated mountains in the world, and are most visited by travelers.

4. A glacier is a mass of slow-moving ice formed on the slopes of the mountain sides that face each other. As it moves down to a warmer level, it melts into a mountain stream.

III. GREAT BRITAIN.

For Reading:

The wealthiest, most populous, and most powerful nations of Europe are Great Britain, France, Germany, Austria, and Russia. These nations are so strong and great that they are sometimes called "The Five Great Powers."

The kingdom of **Great Britain**, including Ireland, though smaller than the state of California,

has a population of 30,000,000 of people. Do you wonder how they can be supported? Their land, though very carefully tilled, does not yield enough for them to live on from year to year. Yet Great Britain is probably the richest country in the world. How can this be?

Far below the surface are vast beds of coal. Near by them are also rich mines of iron. This means that iron for steam engines, locomotives, hardware, and all the machinery needed for all sorts of factories, is easily got and is cheap. It means that the coal to melt the iron ore and to feed the furnaces of thousands of factories is cheap, also.

So it has happened that the British people are employed in mining for coal and iron and in manufacturing the iron into ships, locomotives, and rails for railroads, machinery for factories, and all kinds of hardware, to sell.

Then they use part of their machinery for manufacturing other things to sell—woolen cloth, cotton cloth, linen goods, cutlery, hosiery, and many other articles. It requires a great number of people to carry on this work, and therefore large towns have grown up all over the kingdom. The farming country between these towns is also very thickly settled.

The business of buying these manufactures and shipping and selling them to foreign nations, and taking their products in exchange, furnishes occupation to many thousands of people, and builds up great commercial cities, like London—the largest city in the world—Liverpool, and Glasgow. The British are, therefore, the greatest nation of manufacturers and traders in the world. On one river of Scotland 40,000 men are engaged in building ships to enable England to carry on her commerce. Many ships are also built for the merchants of other nations.

Though there is but little farming country, much attention has been given to raising fine

horses, cattle, and sheep. Some of the finest breeds of these animals in the United States have been brought from England.



SHEPHERD SCENE IN SCOTLAND.

The English nation has possessions in all parts of the world. It has been said that "the sun never sets on British soil." Nearly half of North America, all of British India, and the whole of Australia, besides many smaller possessions, belong to Great Britain.

For Recitation:

III. 1. Name The Five Great Powers. In what three things do they surpass other nations of Europe?

2. What is the language of the people of Great Britain? Size of Great Britain? Population? Wealth?

3. What of iron? Coal? Why are they cheap?

4. What industry does the cheapness of iron and coal in Great Britain foster? Make as long a list as you can of articles that are called hardware.

5. What is cutlery? Hosiery? Why are there many large towns in Great Britain?

6. What business makes the great commercial

cities of Great Britain? Name three of these cities. In what two great occupations do the British surpass all other nations?

7. Raising of live stock—exported to what country?

8. What is the government of Great Britain? What is meant by the sun's never setting on British soil? Name the chief British possessions.

IV. FRANCE.

For Reading:

Go next across the English Channel into the republic of **France**. (*What is the direction?*) There you will find an active, intelligent, polite, and economical people. Such a people is always prosperous.

Though the whole country is only about one third larger than the state of California, it contains a population of 36,000,000 of people, and as the climate is favorable, the soil fertile, and as many of the inhabitants are engaged in cultivating it, enough is raised to support them all. On their small farms, generally not more than five acres each, the French raise all the kinds of grain and vegetables that we do in this country.

In addition to these, in the northern part of the country they raise large crops of flax and sugar beets; and the famous Norman work horses that we see in this country come from the north of France.

As we travel farther south we come into the region of vineyards, and find on the hillsides men and women and children cultivating or gathering the grapes.

Still farther south the mulberry trees appear and the silkworm¹ is reared, and here the fig and the olive are produced in large quantities.

France is also rich in mines as well as in soil,

¹ Reading Hour: *California Second Reader*, p. 286, Silk.

especially in mines of lead. Coal and iron are found in the eastern and central parts of the country, but in much less quantities than in England. Fine quarries of marble also abound.

Though five times as many people are at work on the farms as in the factories, we shall, nevertheless, find many thousands of the most skilled workmen in the world engaged in the factories of the large towns.

These factories are noted for fine goods of all kinds—broadcloths, flannels, laces, carpets, iron and brass wares—but we should especially notice the great quantities of linen goods and beet sugar manufactured in the north, the wines and brandies of the middle section, and the silks in the south, at Lyons and the neighboring towns.

It will be interesting, also, to remember that the chinaware most famed for its beauty and delicacy is made in France from a fine clay found only there.

The French have done much to encourage manufactures. Among other things, they have established in many cities, but chiefly in Paris, free schools, in which boys and girls are taught trades.

In the many large towns of France we cannot fail to notice the signs of vast trade. A country producing so much from its soil and so much from its factories will always have thousands of people engaged in commerce.

To make commerce easy we shall find, in France, railroads running across the country in every direction, and canals connecting the headwaters of the principal rivers, the Seine, the Loire, the Rhone, and the Rhine. By this means you could, if you wished, enter France in a boat by the Seine River, at Havre (häv'r), travel all about the interior of the country, and go out of it into the Mediterranean Sea by the Rhone, or into the Bay of Biscay by the Loire, or into the North Sea by the Rhine, and never set foot on land from the

time you started. Look on your map, and see where these canals must be.

Paris, the capital of France, is the best built, gayest, and most attractive city in the world. Its streets are kept almost as clean as a house floor, and its public gardens, where every one is free to walk or ride, abound in flowers and fountains.

ANIMALS OF EUROPE.

For Reading Only:

The Reindeer is the most useful animal known to the inhabitants of the extreme north of Europe. It pulls a load of 250 pounds in a sledge over the snow, at the rate of nine or ten miles an hour. The female furnishes milk for food. The number of reindeer owned by a Laplander determines his wealth; if a thousand, the owner is one of the rich men of the country; if a few hundred, he is respectable; if only forty or fifty, he is poor and a servant. The food of the reindeer in winter is a coarse, moss-like plant called lichen (lī'ken), for which it digs in the snow with its hoofs and horns.—**The Wolf** is an animal of the dog kind, a cruel and cowardly beast of prey, even sometimes attacking and devouring one of its own kind. It does not get its prey by springing upon it, like the panther or tiger, but by running it down. When trapped it displays the most abject cowardice. A wolf that had fallen into a pit dug for it was so frightened that it made no attempt to injure an old lady who accidentally fell into the same trap. Several species of wolf also live in North America.—**The Brown Bear**, common in Russia and northern Europe, is, like his American cousin, the Grizzly, a tough fellow to meet. He is hard to kill, even with bullets, and is so quick and powerful in the use of his paws that a hunter once within reach has little chance of escape. When captured young, however, the bear becomes much attached to its owner and friends. The bear often continues to grow till it is twenty years old, reaching a weight of 600 to 800 pounds.—**The fur of the Common Fox** is of a reddish fawn color, intermixed with black and white hairs. The animal is about one foot high and two and a half feet long. It gives out a very powerful and disagreeable odor, and it seems to be aware that the dogs, in chasing it, are guided by this odor, for it resorts to many cunning tricks to throw them off the scent. So ingenious are many of these devices that "as cunning as a fox" is a common saying. In England a fox chase by the owners of the forests, together with their friends, is a celebrated sport.

The Musk Deer is an agile, sure-footed mountain dweller. It is chiefly valuable for a sack of perfume which it carries, called musk, and which is so powerful that a small piece will fill a room with its odor for years.—The Hare is a game animal, and is hunted for sport as well as for its flesh, which is prized as a delicacy. Its average weight is about eight or nine pounds. The favorite mode of hunting the hare is with a band of horsemen and a pack of dogs, the swiftness of the animal making the sport exciting. The hare feeds on grass, vegetables, and tender plants, and is often very troublesome to orchards and gardens.—The Chamois (*shām'my*) is often called a goat, but is in reality a species of antelope. Hardy hunters pursue it among the cliffs and precipices of the Alps, but only those who can tramp and climb for days in the ice and rocks and snow can hope to come within even long rifle shot of the little leaper. Like the American antelope, the chamois lives and travels in herds.—The Ibex is another Alpine animal, but of the goat family. It is fully as active and wary as the chamois, and, in addition, will sometimes, if closely pressed, turn upon the hunter and strike him from the rock or cliff on which he stands. The ibex lives in bands



of five or ten individuals.—The Cretan Sheep is a splendid animal of southern Europe and western Asia. It is covered by a soft, woolly undercoat, protected by long, drooping hairs. The wool is extremely fine in

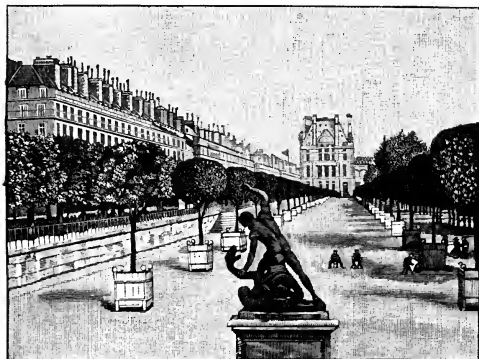
quality, and is employed in the manufacture of warm cloaks, almost impenetrable by the cold.

Reading Hour: *Wood's Mammalia*, p. 690, the Reindeer; p. 325, The Wolf; p. 391, The Brown Bear; p. 332, The Fox; p. 703, The Musk Deer; p. 581, The Hare; p. 650, The Chamois; p. 668, The Ibex.

For Recitation:

IV. 1. What is the government of France? What is the character of the people of France?

2. Size; population; climate; soil; variety of product.



PUBLIC GARDEN NEAR PARIS.

3. Copy and fill out this diagram with the products of France:

Northern Section . . .	
Middle Section	
Southern Section . . .	

4. Name the minerals of France. What of coal and iron?

5. Compare the number of people on farms with the number in factories.

6. For what are the factories generally noted? Make a diagram like the above for the manufactures of Southern, Middle, and Northern Sections of France. Why do we not find the manufacture of wines and brandies in the Northern Division? Why not of linens in the south of France?

7. Chinaware.

8. How are manufactures encouraged?

9. What makes France a commercial country?

10. Tell how commerce is made easy in France. If you enter France by the Seine River, and go out by the Loire, what water do you leave when you enter, and into what water do you go when you leave? If you go out by the Rhone, into what water do you go? If by the Rhine?

11. What of Paris?

V. GERMANY.

For Reading:

Directly east of "Sunny France" lies the most powerful country of Central Europe—the Empire of Germany. If we enter it upon its southern side, from France, we shall find ourselves upon its highest mountains. Turning our steps northward, we shall come upon lower mountain ranges, and then upon lower ones still, till we come down upon the broad plains sloping to the North Sea and the Baltic Sea.

As we go northward the climate changes also. In the mountains the valleys are warm and the winters short, while on the northern plains the cold in winter is so intense that for several months in the year the rivers are covered with ice so thick as to bear loaded wagons. The climate is healthful, however, and the Germans are a strong, hardy race of industrious people.

Their country is a little larger than France, and they have about 6,000,000 more people. Their soil is less fertile, and their climate less favorable for field culture. Nevertheless, by their great industry and by good methods of working their land, they raise enough of the grains, vegetables, and fruits common in the Temperate Zone to supply nearly all their food, though most of the laboring people live very poorly. Sugar beets are more extensively raised, and beet sugar more largely manufactured, than in any other country. Horses, cattle, hogs, and sheep

are raised in immense numbers; and the valley of the Rhine,¹ the most beautiful valley of Europe, is famous for its vineyards and its wines.

Next to England, Germany, in mines and manufactures, is the richest country in Europe. It has a large trade with foreign nations, mostly with England. Besides the great variety of its other products, it has, like California, large quantities of wine and hops to sell to other countries.

The people² of Germany are especially distinguished for two things—their great army, and their common schools. More attention is given to education than in any other country of Europe.

Berlin, the capital of Germany, is the third city of Europe in population. It is a handsome city, and is distinguished for its schools, its public libraries and museums, and its manufactures.

For Recitation:

V. 1. The surface of Germany is mountainous in the south and level in the north.

2. The valleys in the mountains have warm summers and short winters. The winters on the northern plain are cold and long. The climate is healthful.

3. Germany is a little larger than France, but is less fertile. Nearly enough is raised in Germany for the food of the people. What of live stock? The valley of the Rhine?

4. In mines and manufactures how does Germany compare with other countries? In what does it resemble California?

5. For what are the Germans especially distinguished?

¹ Reading Hour: *Seven Little Sisters*, p. 89, Louise, the Child of the Beautiful Rhine.

Our World Reader, p. 86, The Rhine.

² Reading Hour: *Life Among the Germans*, p. 21, Birthdays; pp. 194-195, A School Examination; p. 199, How Girls Study Sewing; pp. 54-55, A German Kitchen; p. 139, A New Year's Party.

6. Write six facts about Berlin, and number them.

VI. AUSTRO-HUNGARY.

For Reading:

Starting from southern Germany and going eastward we pass into another of The Five Great Powers—the empire of **Austro-Hungary**. This is the most mountainous country of Europe, except Switzerland.

We shall find Austria covered with heavy forests, and fields of such grain as is usually found in the Temperate Zone.

Like most mountainous countries, she is rich in mines, especially in salt¹ mines. The largest of these, near Cracow, consists of four underground floors, one below another, each nearly two miles long and more than half a mile wide. On these floors are numerous lofty aisles and galleries, hewn out of rock salt. One of the chambers in this mine is fitted up as a chapel, with pulpit, altars, columns, and statues, of salt. The mine has been worked for more than 700 years.

As in most old and wealthy countries, the people are busy, also, with manufactures, and the cities contain many very elegant buildings, both public and private, as well as interesting ancient castles, cathedrals, and universities.

Vienna, the capital, is the fourth city of Europe in size.

VII. RUSSIA.

For Reading:

Russia, the largest of The Five Great Powers, comprises half of Europe and a large part of Asia, and six Russias would cover all the land in the world.

It is mostly lowland plain. The pine forests

¹ Reading Hour: *Aunt Martha's Corner Cupboard*, p. 92, The Story of Salt.

of the north contain many wild animals, and the people there are chiefly engaged in cutting wood and producing tar, pitch, and potash.

In the south rich lands yield, beside other crops of the Temperate Zone, vast quantities of wheat, most of which is exported through the port of Odessa, on the Black Sea. In the export of wheat Russia ranks next to the United States.



A RUSSIAN COACHMAN.

The Russians are large in stature. In character they are strong and rather fierce. The government is a despotism. The chief ruler is called a Czar. His winter palace in St. Petersburg¹ will accommodate 6,000 people. The poorer classes are much degraded.

For Recitation:

VI. 1. Austria is the most mountainous country of Europe, except Switzerland.

2. Heavy forests and large fields of grain cover much of the country.

3. Tell what is said of the mines.

4. With what shall we find the Austrians busy? What sort of countries are usually busy in this

way? What of Austrian cities? What should you think the exports are? Why?

VII. 1. In what Grand Divisions is Russia? Compare it in size with Europe. With the land of the earth.

2. Surface. Occupations and products of the north. [*Find in the dictionary what potash is.*]

3. Soil in the south. Principal product. Wheat in Russia and the United States.

4. Size and character of the Russian people. Chief ruler.

VIII. SWEDEN AND NORWAY—DENMARK— HOLLAND—BELGIUM.

For Reading:

Lying to the north of The Five Great Powers are the kingdoms of Sweden and Norway, Denmark, Holland, and Belgium.

The people of Norway live chiefly by the products of their forests, fisheries,¹ and mines. The country is too cold and barren to produce large crops. Sweden has more land fit for cultivation than Norway, and raises grain and potatoes for export. Swedish iron and steel are the finest in the world, and are exported to other countries. Both countries are under one king.

The people of Denmark, called Danes, live chiefly by hunting and fishing.

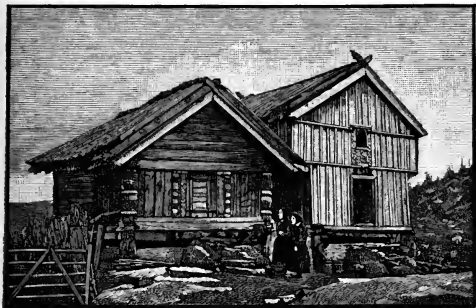
A large part of Holland² was once under the sea. Great walls of earth, called *dikes*, which have been built along the seashore, now keep the ocean from overflowing the land. Holland is famous for its beautiful meadows, its cows, butter and cheese, and its fine breeds of cattle. The Holstein cows, of which there are many in California, were first brought to this country from Holland.

¹ Reading Hour: *The World; its Chief Cities and People*, p. 226, Russia.

¹ *World at Home*, vol. V., p. 13, Curious Things about Fisheries.

² Reading Hour: *Holland*, by de Amicis.

Belgium is a little country full of busy people. It is so thickly settled as to be almost one great city. It is especially famous for its carpets and



NORWEGIAN FARM HOUSES.

laces. There are in Belgium 900 schools to teach the art of lace making, and some of the finest laces of Brussels sell for \$350 a yard.

For Recitation:

VIII. 1. Name the countries lying north of The Five Great Powers. What is their form of government?

2. How do the people of Norway live? Exports of Sweden. Both countries are under one king.

3. Who are the Danes, and how do they live?

4. What is a dike? How is Holland saved from the sea? For what famous? Describe any Holstein cattle you have seen.

5. Belgium is the most thickly settled country of Europe, and is famous for carpets and laces.

IX. COUNTRIES SOUTH OF THE GREAT POWERS.

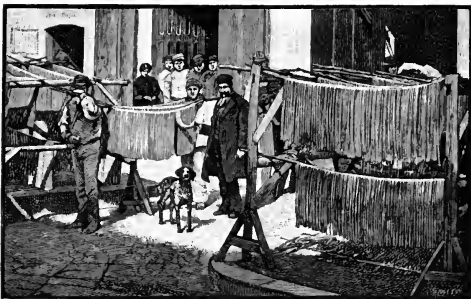
For Reading:

The remaining countries of Europe, except Switzerland, are found in the three peninsulas

that project southward from The Five Great Powers.

Spain¹ and **Portugal**, two kingdoms of the western peninsula, were once powerful nations, with large possessions. They are now feeble governments, and their people are not prosperous. They produce for export, wool, silk, olives, oranges, figs, and wine. Cork is obtained in the southern part of Spain from the bark of a kind of oak. There are still in Spain some relics of its old grandeur. The capital, Madrid, is said to contain the finest picture gallery in the world.

Italy, which occupies the central peninsula of southern Europe, was once a powerful empire. Here the ancient Romans lived. Americans now visit Italy mainly for the sake of what is to be seen in its famous old cities. Rome is interesting as the seat of the ancient empire of the Roman people and the home of the Pope, the head of the Roman Catholic church throughout the world. Venice is built on islands, and has canals for streets. Florence is the most celebrated city for its works of ancient art, and Genoa was the birth-place of Columbus. The industries of Italy are not important. The products consist chiefly of olive oil, rice, wheat, silk, and macaroni.



MAKING MACARONI.

The empire of **Turkey** occupies, with Greece,

¹ Reading Hour: *Spain*, by de Amicis, p. 231, Toledo.

the eastern peninsula of southern Europe. The manners and customs of the Turks more resemble those of Asiatic countries than those of European nations, and a large part of the Turkish Empire lies in Asia. The people are mostly poor and miserable, and greatly oppressed by their government. The soil is fertile, and the products are the same as those found in the other peninsulas of southern Europe. The chief ruler is called a *Sultan*.

Constantinople,¹ the capital, looks from a distance very bright and gay with its religious temples, slender, shining spires, and large cypress trees, but its streets are merely crooked, narrow, dirty, unlighted lanes, and its houses are low and small. Dogs are regarded as almost sacred.

Roumania, Servia, Bulgaria, and Montenegro were until recently under the rule of the Turks. They are now independent.

Greece, though never having large possessions, was, in ancient times, the most celebrated country in the world for the bravery, learning, and oratory of its people. The temples and public buildings of the old Greeks have ever since their time been the models used by civilized nations in building. This country, once so famous, is now unimportant. Athens, the capital, is now noted only for its ruins.

Between the southern peninsulas and The Five Great Powers we find **Switzerland**. This is a romantic little country situated among the highest mountains² of Europe. It has been for many hundred years the home of a brave, hard working people, who have held their mountain homes against the strongest nations that have sought to invade them. It is too broken in surface to be a rich country, but in its valleys are fine pastures where many cattle are raised, making butter and cheese the chief products of the farm. Switzerland is also famous for its manufacture of watches

and toys, the latter employing the peasants during the long winter evenings. The government is republican.

For Recitation:

IX. 1. Name all the countries of Europe south of The Five Great Powers. In what natural divisions are most of them? What exception?

2. Spain and Portugal—kind of government; situation; former condition; present condition; exports; cork.

3. Where is Italy situated? Write in one column a list of its famous cities, and opposite each write for what it is famous. Products of Italy.

4. What six countries make the southeastern peninsula of Europe? Character and condition of the Turks. Chief ruler.

5. For what was ancient Greece famous? What of its present condition?

6. Switzerland—situation; character of people; chief farm products; winter employment.

Write the names of all the countries of Europe, and the names by which their people are called, thus:

England Englishmen.
Spain Spaniards.

TOPICAL REVIEW OF EUROPE.

Write, in your own language, all of the geography of Europe that you know, using, as a guide, the following topics:

Position.	Products:
Extent.	(Mineral, vegetable, animal.)
Mountain Systems.	Occupations:
Drainage:	(Farming, manufacturing, mining, commerce.)
(Slopes and rivers.)	Countries.
Climate.	Cities and Towns:
People.	(Location, for what noted, etc.)
Animals.	

¹ Reading Hour: *Constantinople*, by de Amicis, p. 108, Dogs.

² *Our World Reader*, p. 70, The Alps and their People.

ASIA.

[Before taking the lessons, "For Reading," let the map on the next page be carefully studied.]

I. SIZE—SURFACE—CLIMATE—PEOPLE.

For Reading:

We now come to the largest of the Grand Divisions, that of **Asia**. It is about twice as large as North America, and four times as large as Europe. There are many reasons why we should be curious to know something of Asia. In the first place, it is supposed that the human race had its beginning there. Every great religion in the world, also, began in Asia. Another interesting fact is that the domestic animals—the horse, the cow, the sheep, the goat, the hog, and the "barn-yard fowls"—were first known in Asia.

In surface and climate Asia is divided into three belts, extending east and west across the Grand Division.

The most northerly of these belts consists of the vast plain that slopes to the Arctic Ocean, and possesses, through nearly its whole extent, a climate of excessive cold.

The central belt consists, for the most part, of the great plateau region upon which the lofty mountains of Asia stand, and its climate is marked by cold winters and hot, dry summers. From the plateaus of this region rise mountains with peaks higher than any bird can fly—the highest mountains of the world. Mt. Everest, a peak of the Himalaya, is five and a half miles high.

The southern belt, which lies south of the great central mountain system, embraces the peninsulas of southern Asia, and is mostly a level country, with a hot and moist climate.

Asia contains more than half of all the people of the globe, and nearly the whole of this population is crowded into the southeastern part. Here, in the countries of British India, Indo-

China, Japan, and the eastern half of the Chinese Empire, are nearly 800,000,000 of people. In the east the inhabitants are mostly of the Mongolian race; in the west they are of the Caucasian.

For Recitation:

- I. 1. Comparative size of Asia.
2. Three things that make Asia of interest to us.
3. How is Asia divided in surface and climate?
4. Surface and climate of northern belt.
5. Of central belt.
6. Of southern belt. Of what natural divisions does southern Asia consist? Compare it with Europe in this respect.
7. Population of Asia.
8. Races of Asia and their locality.

II. SIBERIA AND THE CHINESE EMPIRE.

For Reading:

Siberia, the most northerly country of Asia, is a Russian possession. It is larger than the whole of Europe or the United States. The northern part consists of a mossy plain, frozen solid the greater part of the year, and even in the short summer thawing out only a few inches below the surface. Here the reindeer, white bear, and black fox are found.

South of this plain is a belt of heavy forest, with narrow, fertile strips along the rivers. Sable, beaver, ermine, marten, and other fur-bearing animals abound, and people live mostly by hunting, trapping, and fishing.

Still further south lie grassy plains, called

QUESTIONS ON THE MAP.

[Questions in italics to be answered from the open map.]

1. POSITION, EXTENT, AND FORM.—In what hemisphere is Asia? How would you reach it from San Francisco? What oceans wash its northern, eastern, and southern shores, and what Grand Division constitutes its western boundary? *Passing along the coast of Asia from the Isthmus of Suez to Bering Strait, name the gulfs, seas, straits, and bays that border it.*

What is the scale of this map of Asia? *Is it drawn on a larger or smaller scale than the map of Europe, p. 104?* Asia is longest from southwest to northeast; measure the map and find the length of Asia from the Strait of Babelmandeb to Bering Strait. Measure from North East Cape to Cape Roumania and find the width from north to south. *Compare these extents with those of Europe.*

Name the five peninsulas partly surrounded by the waters that wash the shores of Asia. Is the coast line of Asia smooth or irregular? Is it more or less so than that of Europe?

Write all the information you have gained from a study of the preceding questions.

2. MOUNTAINS.—What is a mountain system? What is the general direction of the Hindoo Koosh, Himalaya (him ā'la ya), Thian Shan (te ān' shān), and Altai (āl'ti) Ranges—east and west, or north and south? In what part of Asia are they?

3. SLOPES AND RIVERS.—What is a slope? How is

the direction of a slope told on a map? Study the map and tell how many great ocean slopes Asia has. What is the direction of each slope? In what part of Siberia is the land highest?

What is a river system? Which is the principal river of any river system? What is a river basin? What are the three principal river systems of the Arctic, or Siberian Slope? Of the Pacific, or China Slope? Four of the Indian Slope? *Describe the principal river of each system.*

Write a short composition to tell what you have learned from answers to questions under "Slopes and Rivers." Omit the last question.

4. CLIMATE.—In how many zones does Asia lie? In which zone is the greater part of Asia? How do you tell? *Which of the great slopes of Asia do you think are warm, and which cold? What climate should you expect to find in the high mountain regions of the central part?*

5. ISLANDS.—What country of Asia consists of islands? In what direction is it from the mainland? What group of islands southeast of Asia? What large island south-east of Indo-China? What island south of the Malay Peninsula?

Bound Siberia, China, India, Arabia, Persia (she a), Afghanistan is tān', Bel oo chis tān'. Locate the following cities: Tobolsk', Yo ko hā'mā, Tō'ki ō, Pekin, Canton, Shang'hai (hi), Calcutta, Mecca, Muscat, Damascus. Which of these are capitals? Of what countries?

PRONUNCIATIONS.—A moor'; Brāh ma poo'trā; Cam bō' di a; Co-rē'a; Gān'gēs; Ho āng ho'; Kam chāt'ka; O-bī; O kōtsk'; Per'sian; Phīl'ip pine; Su ez'; Tōn quin' (keen); Yāng tse ki āng'; Yen e se'i (sā'e).

steppes, inhabited by roving bands of Tartars, with their flocks and herds. Some fertile valleys, in the southern part, produce the usual crops of the Temperate Zones. In the mountain regions of the east and south there are rich mines of gold, silver, and other minerals. These give to Siberia its chief value. They are owned by the Russian Government, and are worked chiefly by exiles condemned to this service. Nearly all the inhabitants of Siberia are exiles from Russia, or their descendants.

In the Chinese Empire¹ nearly the entire population lies south and east of the great wall that you see on the map. This is the most fertile

part of the empire. Although less than half as large as the United States, it contains about one fourth of the entire population of the globe. The wall, which separates it from the rest of the empire, was built by the Chinese 2,000 years ago, to keep out their old enemies, the Tartars. It is twenty-five feet high, and so wide that six horsemen can ride abreast on it. Over mountains, into deep valleys, across rivers and every obstacle, this wall extends for more than 1,200 miles.

The Chinese¹ are a well educated and industrious people, but not inventive in machinery. Nearly all their beautiful wares are made by hand.

¹Reading Hour: *Our World Reader*, p. 138, About China.

¹Reading Hour: *Seven Little Sisters*, p. 59, The Story of Pense; *When I was a Boy in China*, p. 26, China Cookery; p. 50, China Schools.

More than 2,000 years ago they knew the art of printing, of making silks, gunpowder, and paper, and had invented the mariner's compass and



A CHINESE VILLAGE.

clocks. The manufacture of silk, linen, porcelain, and a multitude of fancy articles, is extensive, but the Chinese are mainly engaged in farming, producing, chiefly, tea,¹ rice,² cotton, and silk-worms. Next to rice and silk, the bamboos of China bring the largest revenue to the country. Farming is held in high reverence. Once a year the Emperor and the nobles plow a furrow, as an example to the workmen. The Empress raises silk-worms and spins the silk, that other women may not be too proud to labor. The country is so

crowded with people that the hillsides are terraced and the rocks covered with earth to gain ground for cultivation, and the bottoms of the rivers are planted with roots for food, while millions of people live on rafts on the rivers. The Chinese are great traders. The rivers and numberless canals are crowded with vessels of all sizes, engaged in carrying articles of traffic from one province to another. The chief foreign trade of China is with Great Britain. The trade with the United States is next in importance. China has also a large trade with Russia, which is conducted by great caravans passing over the mountains into Siberia and on through to Russia in Europe. Shanghai and Canton are the chief commercial cities. Peking, the capital, is the largest city, and the one of which the Chinese are most proud.

For Recitation:

II. Describe *Siberia* by copying the following outline and filling it out as the first two items are filled:

1. Government.—*Governed by Russia.*

2. Comparative Size.—*It is larger than the whole of Europe or the United States.*

3. Northern Belt.

5. Southern Belt.

1. Surface.— . . .

1. Surface.— . . .

2. Climate.— . . .

2. Tartars.— . . .

3. Animals.— . . .

3. Crops.— . . .

4. Middle Belt.

6. Mines.

1. Kind of country.—

1. What.— . . .

2. Animals.— . . .

2. Where.— . . .

3. Occupation.— . . .

3. How worked.— . . .

7. In what part of China is most of the population? Extent of population.

8. Describe the Chinese wall.

9. Character of the Chinese. Manufactures. Chief occupations. Trade. Chief cities.

¹ Aunt Martha's Corner Cupboard, p. 45, The Story of the Tea.

² Aunt Martha's Corner Cupboard, p. 117, The Story of the Rice.

III. JAPAN AND INDIA.

For Reading:

As we sail from San Francisco to Asia we shall land first in the Island Empire of **Japan**, in the harbor of Yokohama. Ships of all nations, gay with flags, will greet us here, for the Japanese, unlike the Chinese, welcome the foreigner. The Japanese are also much more enterprising, and have introduced railroads, telegraphs, and many other foreign inventions. The productions of the soil are about the same as those of China, and the same may be said of the manufactures. In the populous parts not a foot of land is allowed to go to waste. In the wooded sections camphor, pine, cypress, live oak, cedar, maple, bamboo, and yew trees abound. The bamboo is used in every art, and is the most important tree in the country.

The traveler in Japan has many interesting things to tell of his observations among the people. Everywhere he goes along the streets of the cities, he finds the doors of the houses open and the amusements and employments of the family going on in full view. The Japanese¹ make much of their homes, and fill their leisure hours with games. If the traveler stops to enjoy the scene the host steps to the door and politely invites him in and makes him welcome. Education receives much attention in Japan, even more than in China, the methods of American schools having been introduced within the last few years.

British India is about half the size of the United States, and is under the government of Great Britain. Its population is nearly equal to that of all Europe. The native inhabitants, though of dark complexion, belong to the Caucasian race.

India is the home of the fiercest animals and reptiles known. The tiger, lion, leopard, and crocodile are found in great numbers. The tiger

hunt is a famous sport, and is conducted on the backs of elephants, which are also natives of India.

The productions of the country are, chiefly, rice, cotton, opium, indigo, and sugar. Rice is the chief article of food. India is also rich in minerals and precious stones. The wonderful banyan tree is found here. The branches of this tree bend over to the ground and take root, and in time a grove of considerable size is formed from a single tree.

The leading manufactures are silk, articles of ivory, and the famous cashmere shawls. These shawls are made from the hair of the cashmere goat, and are the most beautiful and durable shawls in the world. They are also the costliest, three or four men sometimes spending a whole year in weaving a pair of them.

Many odd and amusing manners and customs prevail among the people, but the most remarkable feature of Hindoo society is the division of the people into four castes or classes—Brāhmins or priests, soldiers, merchants, and laborers. None of these can intermarry, or even eat and drink together. Those who have been expelled from their caste are called *pā'ri ahs*, or outcasts from society.

For Recitation:

III. 1. In what do the Japanese resemble the Chinese? In what do they differ? Useful trees of Japan.

2. Japanese homes. Education.
3. Comparative size of British India.
4. Animals.
5. Chief vegetable productions. Chief food products. Minerals.
6. Three leading manufactures. Cashmere shawls.

¹ Reading Hour: *Young Americans in Japan*, p. 98.

7. Name the four castes of Hindoo society. Rules that govern them. What is a pariah?

IV. THE REMAINING COUNTRIES OF ASIA.

For Reading:

The peninsula east of Hindostan was formerly called Farther India. The people, however, with the exception of those of the Malay Peninsula, are of the Mongolian race, like the Chinese, while the inhabitants of India are Caucasians. For this reason the country is now called **Indo-China**. The climate and products are about the same as those of India.

West of the three great eastern countries of Asia are the wild tribes of **Afghanistan** and **Beloochistan**. Next beyond these come the **Persians**, a gay, polite, and hospitable people, and formerly a powerful nation. They carry on large manufactures in silks, carpets, and brocades. Two thirds of the people are engaged in rearing herds of cattle and flocks of sheep. The sheep of Persia are famous for their great size.

West of Persia lies **Turkey in Asia**,¹ under the rule of the Sultan at Constantinople. The Turks eat with their fingers instead of forks, sit on the floor, and smoke long pipes. They are fond of coffee and opium. They are *Mo häm' me dans*, and believe in the Koran instead of the Bible. Smyrna is the largest city, and is famous for its export of dried figs. The Smyrna figs are

¹ Reading Hour: *Dead Sea Expedition*, p. 260, Jordan; p. 307, Pillar of Salt.

ANIMALS OF ASIA.

The **Sable** is a little, slender animal of the weasel kind, which inhabits the forests of the extreme north of Asia. Its fur is very valuable, commanding a high price in European markets. The hunter who pursues this creature exposes himself to great peril amid the Arctic snows, frequently losing his life. The sable, like other weasels, lives chiefly by catching birds and small animals and

sucking their blood.—The **Wolverene** is a small, ferocious creature, whose voracious appetite has earned for it the name of *glutton*. The sable hunters detest it, for the wolverene is in the habit of following them round and stealing the bait from their traps. Should a sable be found caught, it, too, is carried off by the wolverene.

—The **Camel of Arabia** is an animal of but one hump, and is superior to the two-humped camel in almost every respect. Its hump is mostly fat, and on long journeys, when poorly fed, the hump gives up its fat for the support of the beast. The camel is able, also, when drinking, to lay in a quantity of water against the day of future thirst, and, being thus provided with food and water for a long journey, it has been called "the ship of the desert." The pace of the common camel used in the carrying of merchandise is only about three miles an hour, though the Arabian camel, or *drom' (drum) edary*, will carry its rider from eight to ten miles an hour, and keep up the speed for twenty-four hours.—The **Orang Outang** belongs to the monkey tribe, and of all that tribe it most resembles man. Its hair is of a reddish chestnut color. It lives mostly in the trees of dense forests, swinging itself from branch to branch by its long arms, which reach, when the creature stands on its hind legs, nearly to the ground. The orang is very powerful, and the male is a creature of hideous appearance. When tamed it soon learns to drink tea and coffee, and becomes fond of spirituous liquors. The African chimpanzee is a species of orang outang.—Unlike the domestic ass, or donkey, the **Wild Ass** is fleet of foot, and cannot be overtaken by a swift Arabian horse. Not even a greyhound can follow it with any hope of success on hilly or rocky ground. It lives in troops, occupying the hills in summer and the plains in winter. Its flesh is esteemed a delicacy.—The **Gazelle** is a species of antelope, swift, graceful, and, like other antelopes, living in herds. It is celebrated by poets for its soft and lustrous eyes.—The **Yak** is a species of wild ox, capable of being tamed and used for work. When overloaded, it vents its discontent in continuous, loud, melancholy grunts, and is therefore called the **Grunting Ox**.—The **Elephant** inhabits the deep forest regions of tropical Asia and Africa, and is the largest animal now living on the earth. The Asiatic elephant can be distinguished from the African by the shape of the head and by the ears. The head of the Asiatic is long, the forehead dished, and the ears small. The African elephant has a short head, a bulging forehead, and enormous ears. Both Asiatic and African elephants live in herds. The elephant, when drinking, first sucks up water into its trunk, then turning the trunk into its mouth, it shoots the contents into its stomach, making a splash that can be distinctly heard by one standing near.—The **Tiger** and **Lion** are the

two animals of the cat kind most renowned for strength and ferocity. The tiger is found only in Asia, where it divides supremacy with the lion, while the latter lords it over all other creatures in Africa. The fur of the tiger is soft and beautiful in color, and its skin is much prized for robes and rugs. The prey of the both animals is taken by stealthily creeping near and suddenly springing upon it. Many ingenious modes of hunting the tiger are employed, and in British India it is the favorite sport of the wealthy classes, who pursue the game on trained elephants, employing the natives to drive or "beat" the animal from its lair.—The Zebu is a quiet, intelligent animal of the ox family, and used in India as oxen are in this country. The chief peculiarity of its shape is a fatty hump upon the shoulder. There are various breeds of differing size. One, known as the Brahmin Bull, is the sacred animal of India, and is never interfered with, though it lie down in the walk, break into fruit or vegetable stores, or in any way assert its wants or wishes.—The Arabian Horse is very light in body, with a long, arched neck, a full, soft eye, and slender, delicate limbs. It is the most gentle and amiable of horses, being reared in the family of its owner with almost as much tenderness as his children. The famous English race horses are descendants of the Arabian steed.



Reading Hour: *Wood's Mammoth*, p. 38, The Sable; p. 374, The Wolf; p. 375, The Gazelle; p. 376, The Wild Ass; p. 377, The Arabian Horse; p. 378, The Elephant; p. 379, The Zebu; p. 380, The Tiger; p. 381, The Cobra de Capello; p. 382, The Camel; p. 383, The Ox; p. 384, The Sheep; p. 385, The Wolf.

the finest in the world. Damascus, in Turkey, is the oldest city in the world.

Five things about **Arabia**¹ will especially interest us:

1. Deserts form the greater part of its surface, and its climate is one of the hottest in the world.

2. The finest coffee in the world, the *Mō'cha*,² is raised in Arabia.

3. The swiftest and most beautiful horses are the Arabian steeds.

4. The Mohammedan religion was founded there by Mohammed, a native of Mecca, and his followers make annual journeys to that city in honor of the event.

5. A large number of the inhabitants have no fixed residence, but wander over the country with flocks and herds. Such people are called *nōm'ads*.

We may learn, also, that Arabia exports drugs, dates, raisins, and wheat.

For Recitation:

IV. 1. Former name of Indo-China. Why changed? Climate and products.

¹Seven Little Sisters, p. 24, The Child of the Desert.

²Aunt Martha's Corner Cupboard, p. 75, The Story of Coffee.

2. Characteristics of the Persians. Manufactures. Chief pursuits.

3. Habits of the Turks. Religion. Damascus.

4. Surface of Arabia. Climate. What of coffee in Arabia? Horses? Who founded the Mohammedan religion? Where? Habits of life in Arabia. Exports.

TOPICAL REVIEW OF ASIA.

Write, in your own language, all of the geography of Asia that you know, using, as a guide, the following topics:

Position.	Products:
Extent.	(Mineral, vegetable, animal.)
Mountain Systems.	Occupations:
Drainage:	(Farming, manufacturing, mining, commerce.)
(Slopes and rivers.)	Countries.
Climate.	Cities and Towns:
People.	(Location, for what noted, etc.)
Animals.	

AFRICA.

QUESTIONS ON THE MAP.

[Questions in italics to be answered from the open map.]

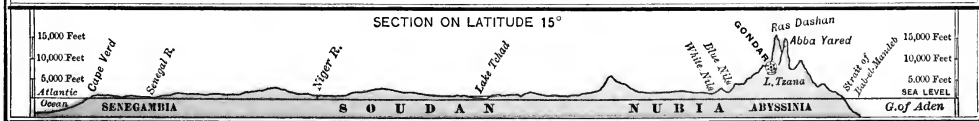
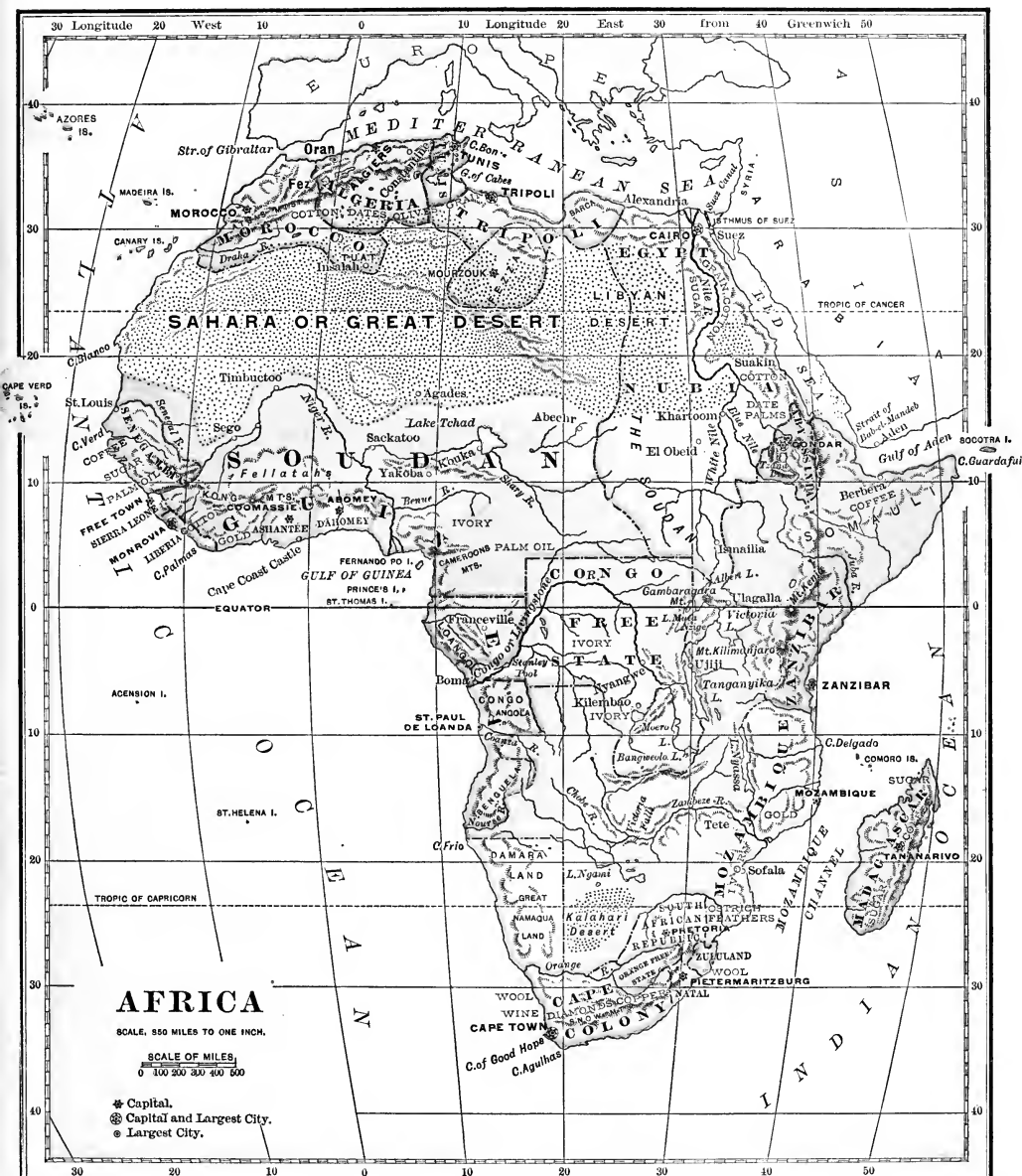
POSITION, EXTENT, AND FORM.—In what hemisphere is Africa? *Passing along the coast of Africa from the Isthmus of Suez through the Red Sea and around to Alexandria in Egypt, name the seas, straits, gulfs, and oceans that border it.*

What is the scale of this map of Africa? *Is it drawn on a larger or smaller scale than the map of Asia?* Measure the map from Cape Bon to Cape Agulhas (*ä gööl'yäs*) and find the length of the Grand Division from north to south. Measure the map from Cape Guardafui (*gwar dā fwee'*) to Cape Verde and find the width from east to west.

What is a coast line? Is the coast line of Africa regular or irregular? More, or less irregular than the coast line of Asia? Than the coast line of Europe? Of North America? Which of the Grand Divisions does Africa most resemble in coast line? In shape?

MOUNTAINS.—Where do you find most of the mountain ranges of Africa—in the interior, or near the coast? What is their general direction? Where are the Atlas Mountains, and what is their direction? The Kong Mountains?

RIVERS AND SLOPES.—Describe the Nile River. *Describe the Niger, the Congo, and the Zām be' (bā)zi Rivers.* At what point do the White and Blue Rivers unite to form the Nile? From Khartoum (*kar tōm'*) to Cairo (*ki'ro*) do you go mostly up hill or down?



CLIMATE.—In what zone does the most of Africa lie? Would you expect to find its climate warmer or colder than that of South America? Why?

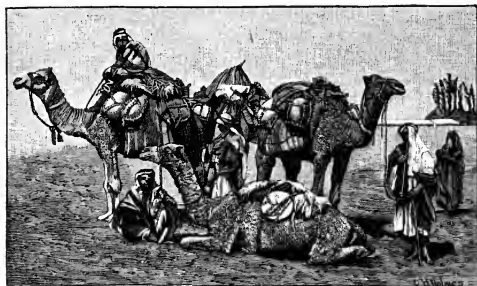
COUNTRIES AND TOWNS.—Bound each of the following countries and name the capital: Morocco, Algeria, Tunis, Trip'o li, Egypt, Abyssinia, Cape Colony. In what part of Africa is Transvaal (träns vāl')? Orange Free State? Zululand? Natal? Sou dan? The Desert of Sahara?

DESCRIPTION.

I. SIZE—CLIMATE—NATURAL FEATURES—INHABITANTS.

For Reading:

In size, Africa is the second Grand Division



RESTING IN THE DESERT.

of the earth. It is three times as large as Europe, but it is the least important of all the Grand Divisions. It consists of a vast table-land, with narrow strips of low plain along the coast. The principal mountain ranges are on the edges of this table-land.

On the north a narrow strip of country bordering the Mediterranean Sea has a temperate climate, and yields cotton, dates, grain, mulberries, grapes, and olives.

South of this lies the great Desert of Sahara,¹ nearly as large as the United States. Though a large part of it is heated sand and rock, there are

here and there quite extensive oā'ses, on which many thousand people have their homes. Across this burning tract caravans of camels go, bearing cotton cloth and trinkets for the negro tribes that inhabit the country south of the desert, and bringing back from them, for the people of Europe and America, ivory, gold dust, and ostrich feathers.

South of the great desert lies a country but little cultivated, which stretches to the southern extremity of the Grand Division. Heavy forests, overgrown with vines, cover the greater part of this region. One tree, the bā'o bab, has been found, measuring in some instances ninety feet around the trunk. It is estimated that some of these trees have been growing for 5,000 years. The lower branches sometimes grow out horizontally sixty feet in length and then droop to the ground, concealing the trunk.

Large and fierce wild animals are found here in

ANIMALS OF AFRICA.

The Leopard is a beautiful and graceful creature of the cat kind, much dreaded by the inhabitants of the region in which it lives, on account of the depredations made upon their domestic animals. The skin of the leopard rivals that of the tiger in beauty, and is equally prized for rugs and robes.—The Gorilla is the most powerful of the ape family, and is greatly feared by the negroes of the countries that it inhabits. It is strong, ferocious, and pitilessly cruel, killing for the enjoyment of it, never eating its victim. The negroes regard the gorilla as embodying the spirit of their dead kings. Young gorillas have been taken by Europeans, but they do not live long in captivity.—The Hippopotamus (sea horse) and the Rhinoceros are both of the elephant family, the large teeth of the hippopotamus furnishing a very white and delicate ivory. The hippopotamus lives mostly in the water; the rhinoceros, on land. The latter animal sleeps in the daytime, and makes long night journeys in search of food. The hippopotamus is a comparatively good tempered animal, but the rhinoceros is fierce and dangerous, more feared by the natives than even the lion.—The Hyena is a most disgusting creature, living on carrion in preference to fresh food. It is a great coward,

¹ Reading Hour: Bancroft's Fourth Reader, p. 202, Sahara.

and will attack nothing that does not run away from it. The Arabs express their contempt for the hyena by throwing mud into its eyes, gagging it, and turning it over to the women and children to ston to death.—

The Zebra, of all the ass tribe, is far the most beautiful. Its general color is a

The crocodile of the Nile is called the true crocodile, that of the Ganges, which is the largest known reptile, and the alligator of North America, being varieties of the well known crocodile of Egypt.—The Horned

Viper is a reptile of northern Africa, about two feet in length, whose bite is extremely poisonous, only less so than that of the

cobra. It can endure long fasts without injury, and has been known to be kept in a glass jar for two years, without food, seeming all the time perfectly lively, and shedding its skin as usual.—

The Ostrich belongs to the group of birds called *runners*, and is the

creamy white, marked all over its body with velvety black stripes. It is untamable, and, like the wild ass, lives in hilly districts and mountain ranges.—The Gnu is a creature classed among the antelopes, and so peculiar in form that at first sight the spectator may be in doubt whether it is a horse, an antelope, or a bull. When alarmed it becomes exceedingly wild and fantastic in its movements and maneuvers, earning for itself from the Dutch settlers in southern Africa the name of *Wildebess*.—The Giraffe holds its head high above that of any other living creature, being, when full grown, from eighteen to twenty feet in height. It is peaceable in disposition, living in herds averaging about sixteen in number. Its taste is very nice, rejecting everything but the most delicate vegetation. In a wild state it feeds chiefly upon the leaves of trees, being able to bring its mouth to the ground only with great difficulty. It has never been known to utter a sound of any kind, even when severely wounded and struggling in the agonies of death.—The Crocodile, though a much dreaded reptile, is of considerable use in the region of the Nile in devouring putrefying flesh, which would otherwise spread disease. It is covered with horny plates so hard as to turn steel weapons and even bullets.



largest and strongest of the group, being from six to eight feet in height. The ostrich lives on wild melons, grass, and grain. Its nest is a shallow hole scooped in the sand, in which eggs are set upright, with other eggs placed around the margin. The eggs are hatched mainly by the heat of the sun, though covered by the parent birds at night, the male bird doing his share. Each egg weighs about three pounds. The shells are so thick and hard that the eggs may be safely carried in sacks thrown over the back of a horse. The value of this bird to commerce lies in its feathers, which are familiar to all.

Reading Hour: *Wood's Mammalia*, p. 166, The Leopard; p. 15, The Gorilla; p. 759, The Hippopotamus and Rhinoceros; p. 218, The Hyena; p. 730, The Zebra; p. 658, The Gnu; p. 684, The Giraffe.

Wood's Reptiles, p. 29, The Crocodile; p. 107, The Horned Viper.

Wood's Birds, p. 644, The Ostrich.

greater numbers than anywhere else in the world. Crocodiles abound in the lakes and rivers. It is said that more than a thousand elephants are sometimes seen in one herd. They are not tamed and taught to work as in Asia, but are killed for their flesh and tusks.

Throughout the great desert and the countries of Africa bordering on the Mediterranean and Red Seas the inhabitants are of the Caucasian race. South of the Sahara they are nearly all negroes,¹ and most of them are savages. In Soudan there are some half civilized people, and in southern Africa the Zulus and some others are intelligent tribes, having flocks and herds and cultivating corn, rice, and other plants. One of the tribes in the south of Africa is said to live in the tree tops. The Hottentots are a degraded people. The Bushmen, a tribe of Hottentots, have neither homes nor tents. They sleep in any shelter that offers—a bush, a hole in the ground, a cleft in the rock—and subsist on grasshoppers, roots, and worms.

For Recitation:

1. 1. Commit to memory the first paragraph.
2. In the northern part of Africa a narrow strip of productive country with a temperate climate borders on the Mediterranean Sea.
3. The Desert of Sahara lies south of this strip. Some fertile tracts in the desert, called oases, are inhabited by a considerable population. Commerce across the desert is carried on by means of camels.
4. South of the Desert of Sahara the country is overgrown with great forests. Large and fierce land and water animals abound.
5. The Caucasian race inhabits the countries of the Mediterranean Sea and the oases of the

desert. South of the desert—negroes. Describe the Zulus. The Hottentots.

II. THE COUNTRIES OF AFRICA.

For Reading:

The states of Morocco, Algeria, Tunis, and Tripoli are called the **Barbary States**. All except Morocco are subject to foreign powers.



WATER MERCHANTS OF EGYPT.

Egypt is the only country of Africa possessing much interest. Thousands of years ago it was the home of a great and populous nation that built magnificent temples and massive pyramids of stone for the burial of their kings and great men. Some of these pyramids were twenty years or more in building, and employed 100,000 men at a time. One of them is 460 feet high, and covers thirteen acres of ground.

Egypt is a very productive country, made so by the River Nile.¹ For several hundred miles

¹ Reading Hour: *World at Home*, vol. I., p. 77, Les. 34, The Black Man at Home.
Seven Little Sisters, p. 74, The Little Dark Girl.

¹ Reading Hour: Parker's *How to Study Geography*, p. 170, The Story of the Nile.

above the mouth of the river it never rains, and yet in the month of June the river in this part of the country begins to rise, and continues to do so for several months, overflowing the whole valley. This rise is due to the heavy rains that flood the streams in the upper part of the valley. When the water goes down, the whole valley is covered with a rich soil, in which the farmer plants his seed.

The dwellings of the farmers stand back from the river on the high ground above the flood. Canals are dug from the river to water the fields in the dry season, and at this season men and women carry water in huge bottles, made of the skins of animals, to distant villages, to sell for household use.

The remaining countries along the seacoast are of but little importance.

Some Dutch and English colonies are in the southern part.

On the west the colony of **Sier'ra Leo'ne**, under the government of Great Britain, was founded as a home for negroes liberated from slave ships.

Liberia is a republic established for negroes who were once slaves in the United States.

Madagascar is a kingdom with several millions

of inhabitants of the Malay race, but professing Christianity.

For Recitation:

II. 1. Commit to memory the first paragraph.

2. Egypt is interesting on account of the greatness of its ancient government, its wonderful pyramids, and its rich soil. Its productiveness comes from the yearly overflow of the Nile.

3. Except the Mediterranean countries and Egypt, the countries of Africa are unimportant.

TOPICAL REVIEW OF AFRICA.

Write, in your own language, all of the geography of Africa that you know, using, as a guide, the following topics:

Position.	Animals.
Extent.	Products:
Coast Line.	(Mineral, vegetable, animal.)
Mountains.	Occupations.
Drainage: (Slopes and rivers.)	Countries.
Climate.	Cities and Towns.
People.	

OCEANIA.

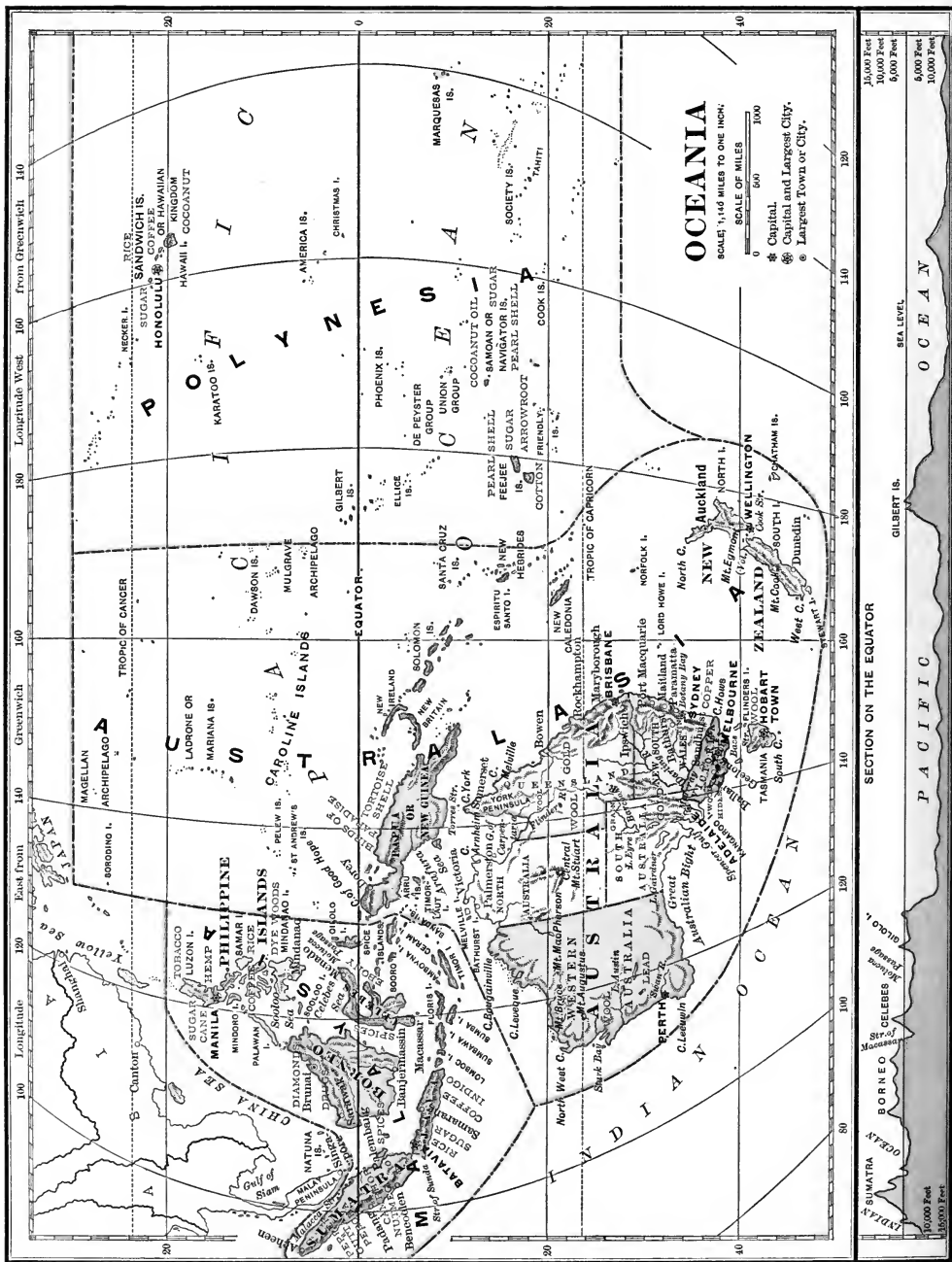
For Reading:

Oceania differs from the other Grand Divisions in consisting wholly of islands.

Those of **Malaysia**, lying entirely within the Torrid Zone, are large, populous, and productive. They have a hot, moist climate, and are subject to destructive earthquakes and violent wind storms, called *monsoons*. Hurricanes sometimes sweep over the seas. For the most part, the soil

is fertile and the vegetation is rich and rank. The wild animals and reptiles are of the same kind as those found in southern Asia. They are large and fierce, and the reptiles poisonous. The native race is the Malay, or Brown Race.¹ The chief products of the soil are rice, sugar, nutmeg, cloves, cinnamon, cotton, and sago. Date, coconut, and camphor trees are seen almost

¹ Reading Hour: *Seven Little Sisters*, p. 5, The Little Brown Baby.



QUESTIONS ON THE MAP.

1. Into what three divisions is Oceania divided? Which division lies nearest to Asia? In what direction from Asia is Malaysia? In what ocean does it lie? In what zone? Which is the largest island of this division? [*Borneo*.] Give the direction of the following islands from Borneo: Philippine Islands; Celebes; Java; Sumatra. Which island of the division lies nearest to Asia?
2. In what waters does Australasia lie? In what zones? Which is the largest island of this division?

What large island north of it? What island south of the eastern part? What large island southeast? What group of islands east of New Guinea? What large group of small islands north of the Solomon Islands? *Name the divisions of Australia and their capitals. Tell in what part of Australia each division is.* In sailing from San Francisco, which side of Australia will you first reach?

3. In what ocean is Pōl y nē'sia (she a)? In what zone? In what direction from North America? In what part of Oceania?

everywhere. Valuable minerals are also found, the chief of which are gold, antimony, and diamonds.

The *Philippine Islands* belong to Spain. Except some very small possessions by the Portuguese and English, the remaining islands belong to Holland. The bamboo is much used for houses, and the chief towns are often built over the water on stakes driven into the ground. Stakes driven into the ground in this way are called *piles*.

Borneo is as large as Texas, and has mines of gold and antimony.

The natives of *Java* are more civilized than those of the other islands. We know of Java especially as a coffee country. Sugar is also an important product.

Gold mines, petroleum, and dense forests distinguish *Sumatra*.

Australasia contains the largest island in the world—*Australia*—which is sometimes called a continent. It has no high mountains and much desert land. Much of the vegetation and many of the animals are natives of no other part of the world. Eū ca lŷp'tus trees, commonly cultivated in Africa, grow wild only in Australia and a few adjacent islands, where there are about 150 kinds. Some strange animals, called Marsu'pials,¹ are natives chiefly of this country. The

kangaroo is the largest of these animals, and is often six feet high when standing on its hind legs. 'Though timid, it will sometimes turn on its pursuers, clasp a dog or a man in its arms, and leaping quickly to a water hole, plunge its enemy in and drown him.

The richest gold mines in the world are said to be in Australia. The usual crops of Europe and America are raised, but wool is the chief article of export. Excellent horses are also reared and shipped to India. The natives are a degraded race, and are fast disappearing. The island belongs to Great Britain.

Of *New Guinea* but little is known. The natives are hideous creatures. The Dutch have some settlements there.

New Zealand also belongs to Great Britain. It has a delightful climate, and its products resemble those of Australia.

Polynesia (*many islands*) consists of an immense number of small islands. The natives of Polynesia are more finely formed than those of the other divisions of Oceania. The climate of these islands is generally agreeable.

All of the islands are volcanic. Some of them have sunk beneath the sea, and left above the surface only a fringe of cor'al that surrounded them near the water's edge. This fringe of coral is like a ring, with one or two breaks in it, through which the sea enters. The land is called an *a tōll'*,

¹ Reading Hour: *Animal Memoirs*, p. 164, Wallaby Joe. *Fliers, Creepers, and Swimmers*, p. 186, Stories of Marsupials.

and the water inside is called a *la goon*'. The coral is the lime left from bodies of millions of small creatures when they die. These creatures are called *pōl'yps*. They begin their work at the bottom of the sea, near the shore where the water is shallow. As the volcanic island, through many centuries, gradually sinks, these little creatures as gradually build to the surface by depositing the limestone that makes the solid part of their bodies. Then weeds and seeds are washed upon it by the sea. The weeds decay and make soil; the seeds grow and become plants and trees.

Cocoanut and banana trees grow almost everywhere. Sugar cane and cotton are largely cultivated. The *Hawaiian* (*hā wī'an*) group, or Sandwich Islands, are under the government of a native king. They raise a variety of crops, of which sugar is the chief. Many of the sugar plantations are owned by citizens of the United States. They have a large trade with the United

States, and especially with California. Raw sugar is the chief article of export. The *Samoan Islands* are under the united protection of the United States, Germany, and England, and civilization is more advanced there than elsewhere in Polynesia.

For Recitation:

1. How does Oceania differ from the other Grand Divisions?
2. Select the statement that most interests you in paragraph two, and learn it. Also the statement that you think most important.
3. Do the same in paragraph three.
4. In the description of Australasia select the two statements that most interest you, and learn them. Also two that you think the most important.
5. Do with the description of Polynesia as with that of Australasia.

¹Reading Hour: *Builders of the Sea*, p. 9, Corals.

LIST OF BOOKS FOR SUPPLEMENTARY READING.

[*Authors' names in italics; Publishers', in roman.*]

How to Study Geography *Parker*.
 World at Home, six vols. Thos. Nelson & Sons.
 Gypsal Relief Maps Bay State Publishing Co.
 Geography with Sand Modeling *Frye*.
 World by the Fireside *Kirby*.
 World at Large.
 Mammalia *Wood*.
 Reptiles *Wood*.
 Birds *Wood*.
 Methods and Aids in Geography *King*.
 Geographical Reader Scribner.
 Seven Little Sisters Lee & Shephard.
 Easy Steps for Little Feet *Swinton*.
 Iceland, Greenland, and the Faroe Islands Harper Bros.
 Fox Hunting.
 Geographical Reader *Johonnot*.

Our World Reader *Hall*.
 Mexico and her Lost Provinces *Bishop*.
 On the Amazons.
 Brazil, Amazons *Smith*.
 Afloat in the Forest.
 Aunt Martha's Corner Cupboard *Kirby*.
 The World; its Chief Cities and People.
 Holland *de Amicis*.
 Spain and the Spaniards *de Amicis*.
 Constantinople *de Amicis*.
 Dead Sea Expedition.
 Bancroft's Fourth Reader.
 Animal Memoirs, Parts I, II. *Lockwood*.
 Fliers, Creepers, and Swimmers *Johonnot*.
 Builders of the Sea.
 Life Among the Germans *Parry*.
 California Second Reader.
 When I was a Boy in China *Yan Phou Lee*.

PRONUNCIATIONS.

Ăf għăh is tăn'.	Chēs'a peake.	Mă'rg.	Săn'ta Ma rî'a.
Agulhas (ă gōol'yās).	Chîl'î.	Ma rî'ă.	Săn ti ă'go.
A leu'ti an(she an).	Chris ti ă'ni a.	Mich'î gan.	Se ăt'tle.
Ăl ma den'.	Côl'fax.	Mon gô'li an.	Seine (sâne).
Ăl'tai(ti).	Col o ră'do.	Mon tă'na.	Sî er'ra Le o'ne.
A moor'.	Concord (konk'urd.)	Mon te vid'e o.	Sî er'ra Ne vă'da.
An'a heim.	Côs'ta Rî'ca.	Mont pêl'ier(yer).	Skag'er Rack.
An'des(dîz).	Co rē'a.	Newfoundland (new'fûnd land).	So lă'no.
Ap pa lă'chi an.	Dar da nelles'(nelz).	New Or'le ang.	Sophia (so fê'ă).
Ar'gen tine.	Des Moines'.	Nî ăg'a ra.	Sou dân'.
Ar'kan sas(saw).	De troit'.	Nîc ar ă'guă.	Su ez'.
Asia (a'shê a).	Di ă'blo.	Nîp'î gon.	St. Louis (saint lōo'î).
Az'tee.	Ec na dōr'.	O'bî.	Suisun (soo e sōon').
Băb el măn'deb.	Edinburgh (ed'in bŭr ruh).	O bî'dōs.	Sŭ mă'tra.
Ba hă'ma.	Esquimaux (ê's'kê mōz).	O khotsk'.	Tăh'le quăh.
Bahia (bă ē'a).	Eû ro pē'an.	O'ma hă.	Tă hoe'.
Bă'l'tic.	Găl lî'năs.	On tă rî'o.	Ta măl'pais(pice).
Baton Rouge(băt'un roozh).	Gă'n'gēs.	Păn'a mă.	Te hăch'a pi.
Běl oo chis tăn'.	Găl'ves ton.	Par a mar'î bo.	The Hague (hăg).
Ben găl'.	Ġib ral'tar.	Pă rî'ne(mă).	Thian Shan (te ăn'shăn).
Bē'ring.	Guardafui (gwar dă fwee').	Per'sia(she a).	To bōlsk'.
Ber'lîn.	Gua(gaw)te mă'la.	Per'sian.	To'ki o.
Bērn.	Guayaquil (gwî a keel')	Phil'îp pine.	Ton quîn(keen).
Bō go tă'.	Gui(ghe)ă'na.	Plă'cer ville.	Transvaal (trans văl').
Boi'ge.	Hawaiian (ha wî'an).	Pol y nē'sia(she a).	Tri'p'o lî.
Bôr'ne o.	Hăy'ti.	Po po cat a petl'.	Tucson (tŭ sŏn').
Bôs'po rus.	Hel ē'na.	Por'to Rî'co.	Tu lă're.
Brăh ma poo'tră.	Him ă'la ya.	Pŭ'get.	Uruguay (oo roo gwî').
Bra zil'.	Ho ăng ho'.	Pŷ'en eeg.	Val lă'ho.
Bu cha(ko) rest'.	Hon dŭ'ras.	Quito (kî'to).	Văl pă rai(rî)so.
Buenos Ayres(bō nus ă'rîz).	Il lî nois'.	Ră'leigh(ly).	Ven ez ue'(we)la.
Bŭl ga'rî a.	Î nēz'.	Ră'line.	Vera Cruz (vă'ră kroos).
Cairo (kî'ro).	Ja mă'r'ca.	Ră'one.	Vî ăn'na.
Căl lă'o.	Japura (ha pōō'ra).	Rî'o Grăn'de(dă).	Will ăm'ette.
Cam bō'di a.	Jă'va.	Rî o Ja nēi'(nē)ro.	Wy o'ming.
Can tă'bri an.	Kam chăt'ka.	Russia (rŭsh'e a).	Xingu (shîng'goo).
Că ră'cas.	Khar toum'.	Saguenay (sag a nă').	Yăng tse Kî ăng'.
Car ib bē'an.	Lî'ma.	Săn An'dreas.	Yen e se'î(să'e).
Carquinez (kar kee'nez).	Loire (lwar).	Săn Ber nar dî'no.	Yer'ba Bwă'nă.
Cat'te gat.	Lōs an'ge lēs.	Să lî'năs.	Yo ko hă'mă.
Cau că'sian.	Mă'dre.	Săn An'dreas.	Yo sēm'î te.
Cau'ca sus.	Ma drîd'.	Săn Ber nar dî'no.	Yu că tăn'.
Ca yenne'.	Ma lăy'.	Săn Joaquin(wah keen')	Yŭ'kon.
Cĕl'e beg.	Ma nă'gua.	Săn José(ho ză').	Zăm bē'zi.
Cheyenne (shî en').	Ma nă'ôs.	Săn'ta Fē.	Zu'nî.
		Săn'ta Î nēz'.	

AREAS AND POPULATIONS.

	Sq. Miles.	Population.		Sq. Miles.	Population.		Sq. Miles.	Population.
Asia . . .	16,428,954	662,613,553	Africa . . .	11,000,000	268,000,000	Europe . . .	3,807,115	359,941,636
N. America . .	8,155,438	79,375,532	S. America . .	7,410,042	31,753,932	Oceania . . .	5,198,151	42,315,347
D. of Canada .	3,470,392	4,324,810	United States .	3,605,000	56,785,456	Mexico . . .	751,157	10,460,703

What three Grand Divisions taken together nearly equal Asia in extent? What two? How does Asia compare in extent with the Western Continent? What two countries of North America are nearly equal in extent? How many times larger is the Dominion of Canada than

Mexico? About how many times larger is the population of Mexico than that of Canada? What Grand Division do the United States, Europe, and Africa, taken together, nearly equal in population?

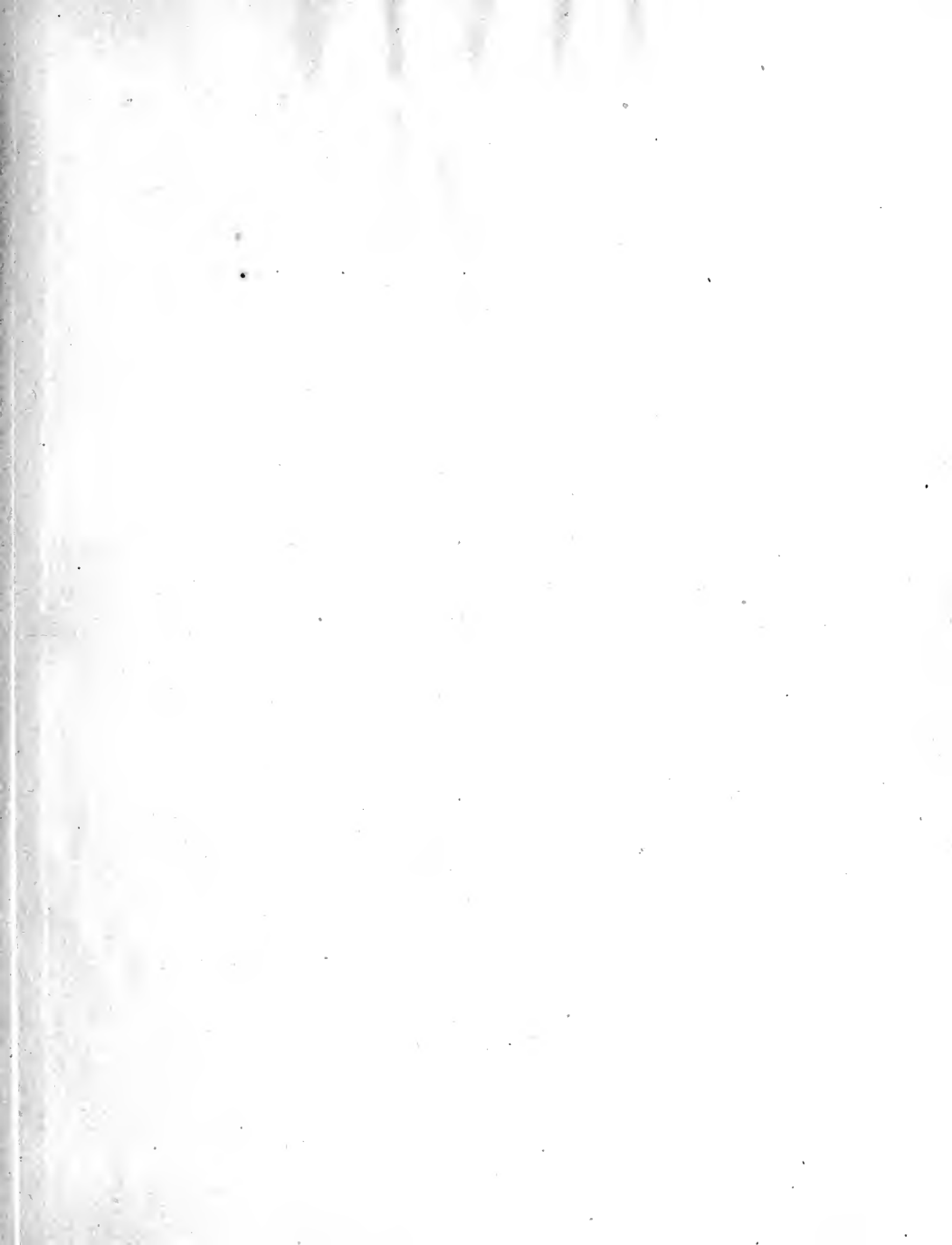
POPULATION OF THE LARGEST CITIES OF DIFFERENT COUNTRIES.

NORTH AMERICA.		SOUTH AMERICA.		Turkey.	
Canada.		Argentine Confederation.		Constantinople	
Montreal	140,000	Buenos Ayres	398,000	Italy.	
United States.		Brazil.		Naples	
(Atlantic Plain.)		Rio Janeiro		ASIA.	
New York	1,300,000	EUROPE.		China.	
Philadelphia	875,000	Great Britain.		Peking	
Brooklyn	604,000	London		Canton	
Boston	390,000	France.		Japan.	
(Great Central Plain.)		Germany.		Tokio	
Chicago	950,000	Austro-Hungary.		Hindustan.	
St. Louis	450,000	Russia.		Calcutta	
New Orleans	235,000	St. Petersburg		AFRICA.	
(Pacific Coast.)				Egypt.	
San Francisco	315,000			Cairo	
Mexico.				OCEANIA.	
Mexico	242,000			Australia.	
West Indies.				Melbourne	
Havana	205,000				

Name, locate, and give the population of the following cities: Largest city in the world. In North America. In South America. In Asia. In Africa. In Australia. In the order of their population, give the name, location, and population of the largest six cities of the globe.

What two cities of Asia have each nearly the same population as New York? What city of Asia is nearest in population to Philadelphia? What city of the world has more than 4,000,000 of people? What city between 2,000,000 and 4,000,000? What cities between 1,000,000 and 2,000,000?





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